CIVIL ENGINEERING BACHELOR OF SCIENCE

Leading to a Bachelor of Science Degree in Civil Engineering

The Bachelor of Science in Civil Engineering program is accredited by the Engineering Accreditation Commission of ABET (http://www.abet.org).

The Civil Engineering program offers a rigorous curriculum designed to prepare students to enter this dynamic profession, pursue advanced studies, and become a licensed professional civil engineer in any of several sub-disciplines, including structural, environmental, transportation, or civil engineering.

Program Educational Objectives

Graduates of the civil engineering program will (within a few years of graduation):

- Lifelong Learning— pursue professional development by obtaining professional licensure, certifications or by post-graduate study as appropriate to meet and adapt to emerging and evolving technology and infrastructure challenges.
- Successful Careers— have a successful career in the field of civil engineering or a related field.
- Professionalism— contribute to the field of civil engineering or a related field as a professional.

Student Outcomes

Students from the civil engineering program will attain (by the time of graduation):

1. An ability to identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply both analysis and synthesis in the engineering design process, resulting in designs that meet desired needs.
3. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
4. An ability to communicate effectively with a range of audiences.
5. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
6. An ability to recognize the ongoing need for additional knowledge and locate, evaluate, integrate, and apply this knowledge appropriately.
7. An ability to function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty.

Total credits for degree: 128

Course	Title	Credits
Freshman Year		
Fall Semester		
ENGR1100	INTRODUCTION TO ENGINEERING EXPERIENCE	2
ENGR1203	ENGINEERING LABORATORY-BSCE	2
CHEM1100	GENERAL CHEMISTRY I	4
MATH1750	ENGINEERING CALCULUS I	4
English Sequence*		4
	Credits	**16**
Spring Semester		
ENGR1300	FIRST-YEAR ENGINEERING DESIGN	2
ENGR1403	APPLIED ENGINEERING ANALYSIS-BSCE	2
MATH1850	ENGINEERING CALCULUS II	4
PHYS1250	ENGINEERING PHYSICS I	4
English Sequence*		4
	Credits	**16**
Sophomore Year		
Fall Semester		
CIVE2000	STATICS & MECHANICS MATERIALS I	3
CIVE2205	INTRODUCTION TO GEOMATICS	4
CHEM1600	GENERAL CHEMISTRY II	4
MATH2025	MULTIVARIABLE CALCULUS	4
	Credits	**15**
Spring Semester		
CIVE2300	CAD IN CIVIL ENGINEERING	3
CIVE2400	CIVIL ENGINEERING MATERIALS	3
CIVE2500	STATICS & MECHANICS MATERIALS II	4
MATH2500	DIFFERENTIAL EQUATIONS	4
MGMT3200	ENGINEERING ECONOMY	3
	Credits	**17**
Summer Semester		
COOP3000	PRE CO-OP WORK TERM (OPTIONAL)	1
	Credits	**1**
Junior Year		
Fall Semester		
CIVE3000	FLUID MECHANICS	4
CIVE3100	ENVIRONMENTAL ENGINEERING	4
CIVE3200	STRUCTURAL ANALYSIS	4
CIVE3300	SOIL MECHANICS	4
Civil Engineering Elective (p. 2)		3
	Credits	**19**
Spring Semester		
COOP3500	COOP EDUCATION 1	
	Credits	**0**
Summer Semester		
CIVE3700	HIGHWAY ENGINEERING	4
CIVE3900	HYDRAULIC ENGINEERING	4
Civil Engineering Elective (p. 2)		3
HSS Elective*		4
	Credits	**15**
Senior Year		
Fall Semester		
COOP4500	COOP EDUCATION 2	
	Credits	**0**
Spring Semester		
CIVE4000	CIVIL ENGINEERING DESIGN PROJECTS	4
Science (Biology or Geology) Elective		4

Course	Title	Credits
Civil Engineering Elective (p. 2)		3
HSS Elective*		4
	Credits	**15**
Summer Semester		
CIVE5500	CIVIL ENGINEERING CAPSTONE DESIGN	4
MATH2100	PROBABILITY & STATISTICS FOR ENGINEERS	4
Civil Engineering Elective (p. 2)		3
HSS Elective*		4
	Credits	**15**
	Total Credits	**129**

ENGL/HSS Note

Students are required to complete:

- At least one course in Humanities: CSAS, HSSI, HIST, HUMN, LITR and PHIL
- At least one course in the Social Sciences: CSAS, HSSI, COMM, ECON, ENVM, POLS, PSYC and SOCL
- The remaining course from either the Humanities or Social Sciences category.

Students with a three English course sequence may use the third English course to satisfy a Humanities requirement.

A minimum of 20 credits total, including English, humanities, and social science credit, is required to complete the humanities and social sciences graduation requirement.

Math Placement (https://catalog.wit.edu/academic-policies-procedures/ug/math-placement/) may alter the course schedule above.

Civil Engineering Electives

Course	Title	Credits
CIVE3250	GIS APPLICATIONS IN CIVIL ENGINEERING	3
CIVE3350	GREEN ENGINEERING	3
CIVE3450	LEGAL ASPECTS OF BOUNDARY SURVEYING	3
CIVE4100	WATER RESOURCES AND HYDROLOGY	3
CIVE4200	GEOLOGY FOR CIVIL ENGINEERS	3
CIVE4225	ENVIRONMENTAL UNIT OPERATIONS	3
CIVE4250	STRUCTURAL STEEL DESIGN	3
CIVE4300	FOUNDATION ENGINEERING	3
CIVE4350	REINFORCED CONCRETE DESIGN	3
CIVE4375	WATER AND WASTEWATER TREATMENT	3

To meet the 12 Civil Engineering elective requirements, a student may take a combination of Civil Engineering electives, Master of Engineering in Civil Engineering courses with School approval. Civil Engineering electives may be substituted with an engineering course from another program, an approved engineering course transferred from an accredited engineering program or other relevant coursework with School approval.