

CIVIL ENGINEERING (BS)

Program Mission

The mission of Civil Engineering Program is to provide a multidisciplinary engineering undergraduate education built on an authentically Catholic liberal arts foundation. Graduates of the program will be professionals who are excellent problem solvers, committed to the highest ethical standards, and proficient communicators. They will understand the role of engineering as a profession and their duty as engineers to promote the good of society.

Program Outcomes

The following are the program educational objectives used by the program for ABET accreditation, and thus are styled as broad statements describing the career and professional accomplishments that the program is preparing graduates to achieve.

1. Graduates will maintain a balanced lifestyle pursuing what is good, true, and beautiful. As they live out their vocation, they will contribute significantly to personal, family, workplace, community, and church endeavors.
2. Graduates will demonstrate technical knowledge and expertise in their profession and will innovate beyond the state of the art.
3. Graduates will demonstrate interpersonal and professional skills to effectively lead teams and projects of substantial size.

Program Requirements

Code	Title	Hours
Required General Education Courses		
PHIL-3250	Ethics	3
THEO-2000	Christian Moral Life	3
Science and Mathematics		
CHEM-1200 & CHEM-1201	General Chemistry I Lecture and General Chemistry I Laboratory	4
CHEM-1210 & CHEM-1211	General Chemistry II Lecture and General Chemistry II Lab	4
Basic Science Elective		4
MATH-1300	Calculus I	4
MATH-1350	Calculus II	4
MATH-2300	Calculus III	4
MATH-3100	Differential Equations	3
PHYS-2100 & PHYS-2101	Classical Physics I and Classical Physics I Lab	4
PHYS-2110 & PHYS-2111	Classical Physics II and Classical Physics II Lab	4
Engineering Courses		
CIVL-2000	Computing in Civil Engineering	1
CIVL-2150	Geomatics & Terrain Modeling Lab	2
CIVL-3010	Soil Mechanics & Civil Eng Materials Lab	2
CIVL-3020	Environmental & Hydraulic Engineeri Lab	2
CIVL-3510	Structural Mechanics	3
CIVL-3120	Soil Mechanics	3
CIVL-3230	Hydraulic Engineering	3
CIVL-3310	Environmental Engineering	3
CIVL-4600	Civil Engineering Design	3

CIVL-4700	Civil Engineering Seminar	1
CIVL-COMP	Senior Comprehensive Exam	0
ENGR-1200	Introduction to Engineering	2
ENGR-1500	Technical Drawing	2
ENGR-2300	Statics ¹	3
ENGR-2310	Dynamics	3
ENGR-2320	Mechanics of Materials ¹	3
ENGR-3150	Statistical Analysis of Data	3
ENGR-3170	Engineering Economy & Society	3
ENGR-3300	Fluid Mechanics	3
Engineering Elective		3
Civil Engineering Technical Electives		18
Basic Science Elective		
Select one of the following:		3-5
ASTR-3000	Observational Astronomy	
ASTR-4200	Solar System Astrophysics	
BIOL-1107	Principles of Biology	
BIOL-1121	General Biology I	
BIOL-3355	Ecology	
CHEM-2200 & CHEM-2201	Organic Chemistry I Lecture and Organic Chemistry I Lab	
NASC-1000	Environmental Science	
NASC-1100	Environmental Geology	
NASC-1400	Earth Science	
or other basic science course as approved by the school		
Engineering Elective		
Select one of the following:		3
CENG-2010	Chemical Engineering Fundamentals	
EENG-2060/3060	Power System Analysis I	
Any ENG-3000+		
Any MENG-3000+ course not already utilized for the civil engineering major.		
Civil Engineering Technical Electives		
Select 18 credits of the following:		18
CIVL-3550	Building Cmppt & System Design	
CIVL-4140	Foundation Engineering	
CIVL-4160	Transport Engineering	
CIVL-4210	Hydrology	
CIVL-4320	Environmental Engineering II	
CIVL-4440	Contracts & Specifications	
CIVL-4510	Steel Design	
CIVL-4530	Reinforced Concrete (or any CIVL-3000+ course)	
Total Hours		131-133

¹ These courses must be completed with a "C" or better to proceed to the next class in Civil Engineering.

Courses required for the major may be repeated but students must pass all required courses on their first or second attempt.

Suggested Sequence of Courses for a Bachelor of Science Degree in Civil Engineering

Course	Title	Hours
Freshman Year		
First Semester		
ENGR-1200	Introduction to Engineering	2
PHYS-2100 & PHYS-2101	Classical Physics I and Classical Physics I Lab	4
CHEM-1200	General Chemistry I Lecture	3
CHEM-1201	General Chemistry I Laboratory	1
MATH-1300	Calculus I	4
EXSC-1115	Wellness for Life	1
GNST-1000	BC Experience	1
Hours		16
Second Semester		
ENGR-1500	Technical Drawing	2
PHYS-2110 & PHYS-2111	Classical Physics II and Classical Physics II Lab	4
CHEM-1210	General Chemistry II Lecture	3
CHEM-1211	General Chemistry II Lab	1
MATH-1350	Calculus II	4
ENGL-1010	English Composition	3
Hours		17
Sophomore Year		
First Semester		
CIVL-2000	Computing in Civil Engineering	1
ENGR-2300	Statics	3
CIVL-2150	Geomatics & Terrain Modeling Lab	2
MATH-2300	Calculus III	4
PHIL-1750	Principles of Nature	3
THEO-1100	Introduction to Theology	3
Hours		16
Second Semester		
ENGR-2310	Dynamics	3
ENGR-2320	Mechanics of Materials	3
MATH-3100	Differential Equations	3
Aesthetic Experience		3
Basic Science Elective		4
Hours		16
Junior Year		
First Semester		
CIVL-3120	Soil Mechanics	3
CIVL-3510	Structural Mechanics	3
ENGR-3150	Statistical Analysis of Data	3
ENGR-3300	Fluid Mechanics	3
THEO-2000	Christian Moral Life	3
Hours		15
Second Semester		
CIVL-3010	Soil Mechanics & Civil Eng Materials Lab	2
CIVL-3230	Hydraulic Engineering	3

CIVL-3310	Environmental Engineering	3
CIVL Technical Elective I		3
EXSC Activity Course		1
PHIL-3250	Ethics	3
Hours		15
Senior Year		
First Semester		
CIVL-3020	Environmental & Hydraulic Engineeri Lab	2
CIVL Technical Elective II		3
CIVL Technical Elective III		3
ENGR-3170	Engineering Economy & Society	3
Faith		3
Foreign Language		4
Hours		18
Second Semester		
CIVL-4600	Civil Engineering Design	3
CIVL Technical Elective IV		3
CIVL Technical Elective V		3
Foreign Language		4
Historical Inquiry		3
Hours		16
Ninth Semester		
CIVL-4700	Civil Engineering Seminar	1
CIVL Technical Elective VI		3
CIVL-COMP	Senior Comprehensive Exam	0
Engineering Elective		3
Philosophical Inquiry		3
Historical Inquiry		3
Aesthetic Experience		3
Hours		16
Total Hours		145