

BACHELOR OF SCIENCE-CIVIL ENGINEERING

The Bachelor of Science in Civil Engineering curriculum is thoughtfully designed to provide students with a strong foundation in engineering principles, analytical skills, and practical experiences essential for success in the civil engineering field. The program spans four years and includes a total of 125 semester credit hours.

It integrates foundational courses in mathematics, physics, and chemistry with a comprehensive sequence of core engineering topics, including structural analysis, geotechnical engineering, water resources, and transportation systems. Students start with introductory coursework in engineering, calculus, and science, gradually advancing to more complex subjects such as reinforced concrete design, fluid mechanics, and construction management.

Additionally, the curriculum incorporates key general education components—such as communication, history, government, and philosophy—to ensure graduates are well-rounded. Emphasis is placed on hands-on learning through labs, surveying, and a two-part capstone design sequence. In their final year, students have the opportunity to customize their education by choosing elective courses in specialized areas like foundation engineering, hydrology, bridge design, and internships.

Overall, the program prepares graduates for licensure and professional practice, combining theoretical knowledge with practical application and professional development.

Degree Requirements

Students should refer to their DegreeWorks degree audit located in their Digital Backpack for more information regarding their specific degree requirements.

Code	Title	Hours
Major Requirements		
General Education Requirements (http://catalog.tamut.edu/academic-information/university-core-curriculum/)		42
Science, Mathematics & Civil Engineering Foundational Courses		
PHYS 2325	University Physics I	3
PHYS 2125	University Physics I Lab satisfies Core Curriculum	1
PHYS 2326	University Physics II satisfies Core Curriculum	3
PHYS 2126	University Physics II Lab satisfies Core Curriculum	1
ECON 2301	Principles of Macroeconomics satisfies Core Curriculum	3
CHEM 1307	General Chemistry for Engineering Students	3
or CHEM 1311	General Chemistry I	
CHEM 1117	General Chemistry for Engineering Students Lab	1
or CHEM 1111	General Chemistry I (Lab)	
MATH 2413	Calculus I	4
MATH 2414	Calculus II	4
MATH 2415	Calculus III	4
MATH 2320	Differential Equations	3
ENGR 1201	Introduction to Engineering	2
ENGR 2304	Programming for Engineers	3
ENGR 2301	Engineering Mechanics - Statics	3
ENGR 2302	Engineering Mechanics - Dynamics	3
CVEN 2305	Physical Geology	3
Advanced Civil Engineering Courses		
ENGR 304	Engineering Graphics I	3
ENGR 307	Probability and Statistics for Engineers.	3
ENGR 340	Fluid Mechanics	3
ENGR 341	Fluid Mechanics Laboratory	1
ENGR 343	Mechanics of Materials	3
ENGR 410	Engineering Economics	3
CVEN 303		
CVEN 305	Civil Engineering Materials	3
CVEN 310	Structural Analysis	3

CVEN 311	
CVEN 312	
CVEN 320	
CVEN 330	
CVEN 404	
CVEN 440	
CVEN 490	
CVEN 491	
Select 6 semester credit hours of Electives from any UD CVEN course or ENGR 365, ENGR 315, ENGR 404, ENGR 431, ENGR 432	6
Minimum Hours for Degree	125

Note: A minimum of 45 upper division hours (300 and 400 level courses) are required for this degree. Resident credit totaling 25% of the hours is required for the degree. A minimum GPA of 2.0 is required in three areas for graduation: Overall GPA, Institutional GPA, and Major GPA.

Bachelor of Science - Civil Engineering - Four Year Plan

First Year

Code	Title	Hours
Fall		
ENGL 1301	Composition I satisfies Core Curriculum	3
CHEM 1311	General Chemistry I satisfies Core Curriculum	3
or CHEM 1307	General Chemistry for Engineering Students	
CHEM 1111	General Chemistry I (Lab) satisfies Core Curriculum	1
or CHEM 1117	General Chemistry for Engineering Students Lab	
MATH 2413	Calculus I satisfies Core Curriculum	4
ENGR 1201	Introduction to Engineering	2
Creative Arts Core Curriculum Requirement (http://catalog.tamut.edu/academic-information/university-core-curriculum/)		3
Fall Total Semester Credit Hours		16
Spring		
PSCI 2305	U.S. Government and Politics satisfies Core Curriculum	3
ENGL 1302	Composition II satisfies Core Curriculum	3
MATH 2414	Calculus II	4
PHYS 2325	University Physics I satisfies Core Curriculum	3
PHYS 2125	University Physics I Lab satisfies Core Curriculum	1
CVEN 2305	Physical Geology	3
Spring Total Semester Credit Hours		17
Total First Year Semester Credit Hours		33

Second Year

Code	Title	Hours
Fall		
ENGR 2301	Engineering Mechanics - Statics	3
MATH 2415	Calculus III	4
SPCH 1315	Public Speaking satisfies Core Curriculum	3
PHYS 2326	University Physics II satisfies Core Curriculum	3
PHYS 2126	University Physics II Lab satisfies Core Curriculum	1
HIST 1301	United States History I satisfies Core Curriculum	3
Fall Total Semester Credit Hours		17
Spring		
ECON 2301	Principles of Macroeconomics satisfies Core Curriculum	3
ENGR 343	Mechanics of Materials	3
MATH 2320	Differential Equations	3

ENGR 2302	Engineering Mechanics - Dynamics	3
ENGR 304	Engineering Graphics I	3
Spring Total Semester Credit Hours		15
Total Second Year Semester Credit Hours		32

Third Year

Code	Title	Hours
Fall		
CVEN 303	Surveying	2
CVEN 310	Structural Analysis	3
CVEN 305	Civil Engineering Materials	3
HIST 1302	United States History II satisfies Core Curriculum	3
ENGR 340	Fluid Mechanics	3
ENGR 341	Fluid Mechanics Laboratory	1
Fall Total Semester Credit Hours		15
Spring		
ENGR 307	Probability and Statistics for Engineers.	3
CVEN 311	Structural Steel Design	3
CVEN 312	Reinforced Concrete Design	3
CVEN 320	Geotechnical Engineering	3
PSCI 2306	State and Local Government satisfies Core Curriculum	3
Spring Total Semester Credit Hours		30
Total Third Year Semester Credit Hours		30

Fourth Year

Code	Title	Hours
Fall		
CVEN 330	Transportation Engineering	3
ENGR 410	Engineering Economics	3
ENGR 2304	Programming for Engineers	3
CVEN 490	Design in Civil Engineering I	2
3sch Prescribed Elective "Select 6 semester credit hours from any upper-division CVEN course or from ENGR 365, ENGR 315, ENGR 404, ENGR 431, or ENGR 432, as listed in the Degree Requirements section."		3
Fall Total Semester Credit Hours		14
Spring		
CVEN 440	Water Resources Engineering	3
CVEN 491	Design in Civil Engineering II	3
CVEN 404	Construction Planning and Management	3
Language, Philosophy and Culture Core Curriculum Requirement (http://catalog.tamut.edu/academic-information/university-core-curriculum/) satisfies Core Curriculum		3
3sch Prescribed Elective "Select 6 semester credit hours from any upper-division CVEN course or from ENGR 365, ENGR 315, ENGR 404, ENGR 431, or ENGR 432, as listed in the Degree Requirements section."		3
Spring Total Semester Credit Hours		15
Total Fourth Year Semester Credit Hours		29
Minimum Hours for Degree		125

Note: A minimum of 45 upper division hours (300 and 400 level courses) are required for this degree. Resident credit totaling 25% of the hours is required for the degree. A minimum GPA of 2.0 is required in three areas for graduation: Overall GPA, Institutional GPA, and Major GPA.