CIVIL ENGINEERING B.S.

Program Requirements

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Minimum Requirements for Civil Engineering B.S. Degree: 126 credits

Students must earn a C- grade or better in each course.

Code	Title	Credits
General University Requirements		
Complete the general university requirements. (https://catalog.uaf.edu/bachelors/#gurbachelorsdegreestext)		
General Education Requirements		
Complete the general education requirements. (https://catalog.uaf.edu/bachelors/#generaleducationrequirementstext)		36-40
As part of the general education requirements, complete the following:		
CHEM F105X	General Chemistry I	
CHEM F106X	General Chemistry II	
MATH F251X	Calculus I	
B.S. Degree Requirements		
Complete the B.S. degree requirements. (https://catalog.uaf.edu/bachelors/#bachelorofsciencetext)		16
As part of the B.S. requirements, complete the following:		
MATH F252X	Calculus II	
PHYS F211X	General Physics I	
PHYS F212X	General Physics II	
Civil Engineering Program Requirements		
CE F112	Elementary Surveying	2-3
or MIN F202	Surveying and CAD for Engineers	
CE F302	Fundamentals of Transportation Engineering	3
CE/GE F326	Introduction to Geotechnical Engineering and Foundations	4
CE F331	Structural Analysis	3
CE F334	Properties of Materials	3
CE F341	Introduction to Environmental Engineering	4
CE F344	Water Resources Engineering	3
CE F432	Steel Design	3
CE F438	Design of Engineered Systems [1]	3
DRT F210	Intermediate CAD	3
ES F100X	Engineering Alaska - An Introduction to Engineering	3
ES F100L	Makerspace Alaska - A Laboratory Introduction to Engineering	1
ES F201	Computer Techniques	3
ES F208	Mechanics	4
ES F301	Engineering Analysis	3
ES F331	Mechanics of Materials	3
ES F341	Fluid Mechanics	4
ESM F450	Economic Analysis and Operations	3
GE F261	General Geology for Engineers	3
MATH F253X	Calculus III	4
MATH F302	Differential Equations	3
Technical Electives [2]		
Complete 3 credits from the fields of environmental, construction or transportation engineering.		3
Complete 6 credits from the following areas of emphasis, or as approved by an advisor.		6
Arctic Emphasis		
CE F401	Arctic Engineering	
CE F424	Permafrost Engineering	
ME F441	Heat and Mass Transfer	
Construction Emphasis		
CE F451	Construction Cost Estimating and Bid Preparation	
Environmental Emphasis		
CE F442	Water and Wastewater Treatment Design	
CE F443	Air Pollution Management	
ENVE F446	Biological Unit Processes	
Geotechnical Emphasis		
CE F422	Foundation Engineering	
GE F440	Slope Stability	
GE F441	Geohazard Analysis	
Structural Emphasis		
CE F433	Reinforced Concrete Design	
CE F434	Timber Design	
Transportation Emphasis		
CE F405	Design of Highways and Streets	
CE F408	Transportation Safety Analysis	
Water Resources Emphasis		
CE/GE F420	Groundwater Engineering	
CE F445	Hydrologic Analysis and Design	
Fundamentals of Engineering (FE) Examination		
Complete the Fundamentals of Engineering (FE) examination administered by the State of Alaska.		
Total Credits		**126-131**

1. Fulfills the baccalaureate capstone requirement.
2. Up to two graduate-level courses may be used towards graduation. Graduate-level courses must be approved by student's advisor, and the student must be within two semesters of graduation and have at least a 3.0 GPA to take graduate-level courses.

Note: The ability to use computers for normal class work is expected in all engineering classes above the F100 level.