

# B.S CIVIL ENGINEERING - ENGINEERING MATH 2025

## Freshman

Fall (14 hrs) Spring (15 hrs)

## Sophomore

Fall (14 hrs) Spring (15 hrs)

## Junior

Fall (16 hrs) Spring (16 hrs)

## Senior

Fall (15 hrs) Spring (15 hrs)

<b>CVEEN 1000</b> Intro to Civil & Environmental Engineering F (3)	<b>CVEEN 1400</b> Computer-Aided Design SP (3)
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WRTG 1010 ↓

<b>WRTG 1010</b> Introduction to Writing (WR1) F/SP/SU (3)	<b>ENGL 2010 or WRTG 2010</b> Intermediate Writing (WR2) F/SP/SU (3)
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MATH 1050 or MATH 1080 ↓      MATH 1310 ↓

<b>CHEM 1210</b> General Chemistry I (PS) F/SP/SU (4)	<b>PHYS 2210</b> Physics for Sci & Engineers I F/SP/SU (4)
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CHEM 1210 or PHYS 2210 ↓

<b>CHEM 1215</b> Gen Chemistry I Lab or <b>PHYS 2215</b> Physics for Sci & Eng. I Lab F/SP/SU (1)
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MATH (1050 & 1060) or MATH 1080 ↓      MATH 1310 ↓

<b>MATH 1310</b> Engineering Calculus I (QI) F/SP (4)	<b>MATH 1320</b> Engineering Calculus II F/SP/SU (4)
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CVEEN 2010 ↓

<b>CVEEN 2000</b> Seminar F (1)	<b>CVEEN 2140</b> Strength of Materials F/SP (3)
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MATH 1310 & PHYS 2210 ↓

<b>CVEEN 2010</b> Statics F/SP (3)	<b>CVEEN 2320</b> Economics & Management F/SP (3)
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See catalog for individual prerequisites ↓

<b>CVEEN 2310</b> Probability & Statistics F/SP (3)	<b>CVEEN 2750</b> Computer Tools or <b>COMP 1010</b> Programming for All F/SP (3)
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<input type="checkbox"/> <b>Science Exploration</b> F/SP (3)	<b>* Additional Science</b> <b>CVEEN 1060</b> Life Science in Eng. (LS) SP (3)
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MATH 1320 & PHYS 2210 ↓      See catalog for individual prerequisites ↓

<b>MATH 2250</b> Diff Equations & Linear Algebra F/SP/SU (4)	<b>CVEEN 2410</b> Geomatics or <b>MG EN 2400</b> Surveying or <b>ME EN 2030</b> Dynamics F/SP/SU (3)
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CVEEN 2140 ↓      WRTG 2010 ↓

<b>CVEEN 3210</b> Structural Loads & Analysis (QI) F/SP (3)	<b>CVEEN 3100</b> Technical Communication (CW) F/SP (3)
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CVEEN 2140 & 2310 ↓      CVEEN 2140 & 2310 ↓

<b>CVEEN 3410</b> Hydraulics (QI) F/SP (3)	<b>CVEEN 3310</b> Geotech (QI) F/SP (3)
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CHEM 1210 & CVEEN 2140 ↓      CVEEN 2140 & 2310 ↓

<b>CVEEN 3610</b> Environmental F/SP (3)	<b>CVEEN 3510</b> Materials (QI) F/SP (3)
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CVEEN 3410 or 3610 ↓      CVEEN 3310 or 3510 ↓

<b>CVEEN 3016</b> Exploring Water/Enviro Lab F/SP (1)	<b>CVEEN 3015</b> Exploring Geo/Materials Lab F/SP (1)
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CVEEN 2310 & 2140 ↓

<b>CVEEN 3520</b> Transportation F/SP (3)	<b>Design Technical Elective</b> F/SP (3)
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CVEEN 3100 ↓      CVEEN 4900 & 1 Design TE & 1 Design TE ↓

<b>CVEEN 4900</b> Professional Prac. & Design I F/SP (3)	<b>CVEEN 4910</b> Professional Prac. & Design II F/SP (3)
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<b>Design Technical Elective</b> F/SP (3)	<b>Technical Elective</b> F/SP (3)
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<b>Technical Elective</b> F/SP (3)	<b>Technical Elective</b> F/SP (3)
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<b>Technical Elective</b> F/SP (3)	<b>Technical Elective</b> F/SP (3)
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<b>American Institutions (AI)</b> F/SP/SU (3)	<b>General Ed. Requirement + IR (FF + IR)</b> F/SP/SU (3)
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**Science Exploration** can be satisfied by taking one of the following: CHEM 1220 or PHYS 2220 or any 1000+ course in the following departments: Astronomy, Biology, Geology, and Atmospheric Sciences.

**\* Additional Science** can be satisfied by taking CVEEN 1060 or one of the following: ATMOS 1120, BIOL 1010 (DV), 1030, 1120, 1610, 1620, 2420, GEO 1040, 1120, 1100. The course used to satisfy the Science Exploration cannot be double counted to satisfy the Additional Science and vice versa.

<b>General Ed. Requirement (BF)</b> F/SP/SU (3)	<b>General Ed. Requirement + DV (HF + DV)</b> F/SP/SU (3)
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**Key**

Major Status Required

Prerequisite

Corequisite

# TECHNICAL ELECTIVES

Students must fulfill 7 technical elective requirements, ensuring they meet the following sub-criteria:

1. Complete at least **one** course in **4 of the 6** different areas within Complex Engineering.
  2. Complete at least **two** design courses from **different areas**. These are designated by a **shaded box**.
- As long as these requirements are met, students have the flexibility to choose the remaining **three** technical electives from either section.

## COMPLEX ENGINEERING ELECTIVES

Environmental	Structures	Geotechnical	Materials	Transportation	Water Resources
CVEEN 3610 & 2140 ↓	CVEEN 3210 ↓	CVEEN 3310 ↓	CVEEN 3510 ↓	CVEEN 3520 & 2140 ↓	CVEEN 3410 ↓
<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 5605</b> Water and Wastewater Treatment <small>SP (3)</small></p> </div>	<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 4221</b> Concrete I <small>F (3)</small></p> </div>	<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 5305</b> Introduction to Foundations <small>F (3)</small></p> </div>	<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 5500</b> Sustainable Materials (IR) <small>SP (3)</small></p> </div>	<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 5510</b> Highway Design <small>SP (3)</small></p> </div>	<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 5410</b> Engineering Hydrology <small>SP (3)</small></p> </div>
CVEEN 3610 & 2140 ↓	CVEEN 3210 ↓		CVEEN 3510 & 3520 ↓	CVEEN 3520 & 2140 ↓	CVEEN 3410 ↓
<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 5600</b> Waste Management &amp; Remediation <small>F (3)</small></p> </div>	<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 4222</b> Steel I <small>SP (3)</small></p> </div>		<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 5570</b> Pavement Design <small>F (3)</small></p> </div>	<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 5560</b> Transportation Planning <small>F (3)</small></p> </div>	<div style="border: 1px solid black; padding: 5px; width: 80%; margin: auto;"> <p><b>CVEEN 5420</b> Open-Channel <small>F (3)</small></p> </div>

## ADDITIONAL TECHNICAL ELECTIVES

	Course #	Course Title	Pre-Reqs	Semesters		Course #	Course Title	Pre-Reqs	Semesters
	CVEEN 3700	Principles of Construction	CVEEN 2750	F		CVEEN 5730	Project Management	CVEEN 3100	SP (online)
	CVEEN 3710	Contracts Specifications	CVEEN 2750	SP		CVEEN 5740	Horizontal Construction	CVEEN 3310	SP
	CVEEN 4605	Intro Data Science Civil	1 core CVEEN 3000-level course	F		CVEEN 5750	Engineering Law & Contracts	CVEEN 3100	Su (even)
	CVEEN 4999	Honors Thesis	Dept. Consent	F/SP		CVEEN 5790	Vertical Construction	CVEEN 3210	F
	CVEEN 5210	Structural Analysis II	CVEEN 3210	Varies		CVEEN 5920	Special Topics	Dept. Consent	Varies
	CVEEN 5220	Concrete II	CVEEN 4221	Varies		NUCL 3000	Nuclear Principles	MATH 1220, CVEEN 2010, CHEM 1220, MATH 1220, CVEEN 2010	SP
	CVEEN 5230	Steel II	CVEEN 4222	Varies		NUCL 3100	Radiation Interactions	CHEM 1220, MATH 1220, CVEEN 2010	F
	CVEEN 5240	Timber/Reinforced Masonry	CVEEN 3210	Varies		NUCL 3200	Radiochemistry	3.20 GPA & Instructor Consent	F/SP
	CVEEN 5610	Water Chemistry	CVEEN 2140, 3610	F		CVEEN 6XXX	CVEEN Graduate Courses		
	CVEEN 5615	Emerging Enviro Issues	CVEEN 3610	SP		Any 3+ credit, 3000-5999 course from the following departments: ASTR, ATMOS, BIOL, CHEM, CH EN, CMP, CS, ECE, ENGIN, GEO, MATH, ME EN, MET E, MG EN, MSE, NUCL, or PHYS.			
	CVEEN 5710	Cost Estimating	CVEEN 3100	F (online)					
	CVEEN 5720	Project Scheduling	CVEEN 3100	F (online)				Varies	Varies