

# B.S. CIVIL ENGINEERING - ENGINEERING MATH 2021

<u>FRESHMAN</u>		<u>SOPHOMORE</u>		<u>JUNIOR</u>		<u>SENIOR</u>	
Fall (17 hrs)	Spring (16 hrs)	Fall (15.5 hrs)	Spring (14 hrs)	Fall (17 hrs)	Spring (17 hrs)	Fall (15 hrs)	Spring (15 hrs)
<b>CVEEN 1000</b> Intro to Civil & Environmental Engineering F 2	<b>CVEEN 1400</b> Computer-Aided Design SP 3	<b>CVEEN 2000</b> Seminar F 0.5	CVEEN 2010 ↓ <b>CVEEN 2140</b> Strength of Materials F/SP 3	CVEEN 2140 ↓ <b>CVEEN 3210</b> Structural Loads & Analysis (QI) F/SP 3	WRTG 2010 ↓ <b>CVEEN 3100</b> Technical Communication (CW) F/SP 3	CVEEN 3100 ↓ <b>CVEEN 4900</b> Professional Practice & Design I F/SP 3	CVEEN 4900 & 2 Design Technical Electives ↓ <b>CVEEN 4910</b> Professional Practice & Design II F/SP 3
MATH (1050 & 1060) or MATH 1080 ↓ <b>MATH 1310</b> Engineering Calculus I (QR) F/SP 4	MATH 1310 ↓ <b>MATH 1320</b> Engineering Calculus II F/SP/SU 4	MATH 1310 & PHYS 2210 ↓ <b>CVEEN 2010</b> Statics F/SP 3	MATH 1310 ↓ <b>CVEEN 2750</b> Computer Tools SP 2	CVEEN 2140 & 2310 ↓ <b>CVEEN 3410</b> Hydraulics (QI) 3 <b>CVEEN 3415</b> Lab 1	CVEEN 2140 & 2310 ↓ <b>CVEEN 3310</b> Geotech I (QI) 3 <b>CVEEN 3315</b> Lab 1	<b>Design Technical Elective</b> F/SP 3	<b>Technical Elective</b> F/SP 3
<b>General Ed. Requirement</b> F/SP/SU 3	MATH 1310 ↓ <b>PHYS 2210</b> Physics for Sci & Engineers I F/SP/SU 4	<b>CVEEN 2300</b> Engineering Economics F/SP 2	CVEEN 2010, PHYS 2210 & MATH 2250 ↓ <b>ME EN 2030</b> Dynamics F/SP/SU 3	CVEEN 2140 & 2310 ↓ <b>CVEEN 3510</b> Materials 3 <b>CVEEN 3515</b> Lab 1	CHEM 1210 & CVEEN 2140 ↓ <b>CVEEN 3610</b> Environmental 3 <b>CVEEN 3615</b> Lab 1	<b>Technical Elective</b> F/SP 3	<b>Technical Elective</b> F/SP 3
WRTG 1010 ↓ <b>WRTG 2010</b> Intermediate Writing F/SP/SU 3	See catalog for individual prerequisites ↓ <b>CHEM 1220</b> Gen Chemistry II or <b>PHYS 2220</b> Physics for Sci & Engineers II F/SP/SU 4	MATH 1310 ↓ <b>CVEEN 2310</b> Probability & Statistics F/SP 3	<b>General Ed. Requirement/DV</b> F/SP/SU 3	CVEEN 2310 & 2140 ↓ <b>CVEEN 3520</b> Transportation F/SP 3	<b>Design Technical Elective</b> F/SP 3	<b>Technical Elective</b> F/SP 3	<b>General Ed. Requirement</b> F/SP/SU 3
MATH 1050 ↓ <b>CHEM 1210</b> Gen Chemistry I 4 <b>CHEM 1215</b> Lab 1	See catalog for individual prerequisites ↓ <b>CHEM 1225</b> Gen Chemistry II Lab or <b>PHYS 2215</b> Physics for Sci & Engineers I Lab or <b>PHYS 2225</b> Physics for Sci & Engineers II Lab F/SP/SU 1	MATH 1320 & PHYS 2210 ↓ <b>MATH 2250</b> Diff Equations & Linear Algebra F/SP/SU 4	<b>Additional Science Requirement</b> F/SP/SU 3	<b>General Ed. Requirement</b> F/SP/SU 3	<b>General Ed. Requirement</b> F/SP/SU 3	<b>American Institutions</b> F/SP/SU 3	<b>General Ed. Requirement/IR</b> F/SP/SU 3
		MATH 1060 ↓ <b>MG EN 2400</b> Surveying F/SU 3					

Have you completed 3 of the 4 shaded courses? Is your EGPA ≥ 2.50? If yes, apply for Full Major Status!

□ The **Additional Science Requirement** is satisfied by taking any 1000+ course in the following departments: Biology, Geology & Geophysics, and Atmospheric Sciences.

## Recommended General Education Courses

LEAP 1501 Social & Ethical Engineering (BF) - Fall only  
LEAP 1500 Humanities for Engineers (HFDV) - Spring only

## KEY

Full Major Status Required

Prerequisite  
Corequisite



# TECHNICAL ELECTIVES

Congratulations on reaching the *Technical Electives*! These delve deeper into the various areas covered in the 3000-level courses. A total of **6** Technical Electives, with the exception of Fastrax students, are required. While you are able to take courses in your areas of interest, further specialization is achieved by pursuing Graduate School.

## Primary Technical Electives

To graduate with a Bachelor of Science Degree in Civil Engineering you must:

1. Take at least **one** course from **3 of the 5** emphasis areas in the Primary section. Three different checkboxes **must** be marked to fulfill this requirement.
  2. Complete at least **two** Design courses from **different emphasis areas**. These are designated by a **shaded box**. *Example: CVEEN 4221 and CVEEN 5420*
- As long as these requirements are satisfied, you may take the remaining **3** technical electives in either section.

### Environmental



CVEEN 3610, 3615 & 2140 ↓

#### CVEEN 5605

Water and Wastewater  
Treatment F 3

### Structures



CVEEN 3210 ↓

#### CVEEN 4221

Concrete I F 3

CVEEN 3210 ↓

#### CVEEN 4222

Steel I SP 3

### Geotech & Materials



CVEEN 3310 & 3315 ↓

#### CVEEN 5305

Introduction to  
Foundations F 3

CVEEN 3510 & 3515 ↓

#### CVEEN 5500

Sustainable  
Materials SP 3

CVEEN 3510, 3515 & 3520 ↓

#### CVEEN 5570

Pavement Design F 3

### Transportation



CVEEN 3520 & 2140 ↓

#### CVEEN 5510

Highway Design SP 3

CVEEN 3520 & 2140 ↓

#### CVEEN 5560

Transportation  
Planning SP 3

### Water Resources



CVEEN 3410 & 3415 ↓

#### CVEEN 5410

Engineering  
Hydrology F 3

CVEEN 3410 & 3415 ↓

#### CVEEN 5420

Open-Channel  
SP 3

## Secondary Technical Electives

With the exception of *Construction*, where only **one** course may be taken, you may take multiple courses in a single emphasis area — up to a **total of 3** courses.

### Environmental

CVEEN 3610, 3615 & 2140 ↓

#### CVEEN 5610

Water Chemistry F 3

### Structures

CVEEN 3210 ↓

#### CVEEN 5210

Structural Analysis II SP 3

CVEEN 4222 ↓

#### CVEEN 5230

Steel II F 3

CVEEN 4221 ↓

#### CVEEN 5220

Concrete II SP 3

CVEEN 3210 ↓

#### CVEEN 5240

Reinforced  
Timber/Masonry F 4

### Construction Management (Max 1)

CVEEN 3100 ↓

#### CVEEN 5710

Cost Estimation &  
Proposal Writing F 22/24 3

CVEEN 3100 ↓

#### CVEEN 5730

Project Management &  
Contract Administration SP 3

CVEEN 3100 ↓

#### CVEEN 5720

Project Scheduling F 3

CVEEN 3100 ↓

#### CVEEN 5750

Engineering Law &  
Contracts SU 22/24 3

### Nuclear Engineering

CHEM 1220, PHYS 2220, MATH 1220 ↓

#### NUCL 3000

Nuclear Principles in  
Engineering & Science F/SP 3

CHEM 1220, PHYS 2220, MATH 1220 ↓

#### NUCL 3100

Neutron Based  
Engineering SP 3

### Other (Max 1)

Any 3000+ level  
course from the  
College of  
Engineering or an  
ABET accredited  
program

3+