

# B.S. CIVIL ENGINEERING - ENGINEERING MATH 2023

<b>FRESHMAN</b>		<b>SOPHOMORE</b>		<b>JUNIOR</b>		<b>SENIOR</b>	
<i>Fall (17 hrs)</i>	<i>Spring (16 hrs)</i>	<i>Fall (15.5 hrs)</i>	<i>Spring (14 hrs)</i>	<i>Fall (17 hrs)</i>	<i>Spring (17 hrs)</i>	<i>Fall (15 hrs)</i>	<i>Spring (15 hrs)</i>
<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	<b>CVEEN 2140</b> Strength of Materials F/SP 3	<b>CVEEN 3210</b> Structural Loads & Analysis (QI) F/SP 3	<b>CVEEN 3100</b> Technical Communication (CW) F/SP 3	<b>CVEEN 4900</b> Professional Practice & Design I F/SP 3	<b>CVEEN 4910</b> Professional Practice & Design II F/SP 3
MATH (1050 & 1060) or MATH 1080 ↓	MATH 1310 ↓	MATH 1310 & PHYS 2210 ↓	MATH 1310 ↓	CVEEN 2140 & 2310 ↓	CVEEN 2140 & 2310 ↓	CVEEN 3100 ↓	CVEEN 4900 & 2 Design Technical Electives ↓
<b>MATH 1310</b> Engineering Calculus I (QR) F/SP 4	<b>MATH 1320</b> Engineering Calculus II F/SP/SU 4	<b>CVEEN 2010</b> Statics F/SP 3	<b>CVEEN 2750</b> Computer Tools SP 2	<b>CVEEN 3410</b> Hydraulics (QI) 3 <b>CVEEN 3415</b> Lab 1	<b>CVEEN 3310</b> Geotech (QI) 3 <b>CVEEN 3315</b> Lab 1	<b>Design Technical Elective</b> F/SP 3	<b>Technical Elective</b> F/SP 3
General Ed. Requirement F/SP/SU 3	<b>PHYS 2210</b> Physics for Sci & Engineers I F/SP/SU 4	<b>CVEEN 2310</b> Probability & Statistics F/SP 3	<b>ME EN 2030</b> Dynamics F/SP/SU 3	<b>CVEEN 3510</b> Materials (QI) 3 <b>CVEEN 3515</b> Lab 1	<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
WR TG 1010 ↓	See catalog for individual prerequisites ↓	<b>CVEEN 2320</b> Engineering Economics F/SP 2	<b>General Ed. Requirement/DV</b> F/SP/SU 3	<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 ↓	See catalog for individual prerequisites ↓	MATH 1320 & PHYS 2210 ↓	<b>MATH 2250</b> Diff Equations & Linear Algebra F/SP/SU 4	<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
<b>CHEM 1210</b> Gen Chemistry I 4 <b>CHEM 1215</b> Lab 1	<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 1060 ↓	<b>MG EN 2400</b> Surveying F/SU 3	<input type="checkbox"/> <b>Additional Science Requirement</b> F/SP/SU 3			

Have you completed 3 of the 4 shaded courses? 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 24/26 3

CVEEN 4221 ↓

#### CVEEN 5220

Concrete II  
SP 24/26 3

CVEEN 3210 ↓

#### CVEEN 5240

Reinforced Timber/Masonry  
F 4

### Construction Management (Max 1)

CVEEN 3100 ↓

#### CVEEN 5710

Cost Estimation & Proposal Writing  
F 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 24/26 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

Radiation Interactions  
SP 3

### Other (Max 1)

#### CVEEN 5920

Special Topics

**OR**

Any 3000+ level course from the College of Engineering or an ABET accredited program 3+