

B.S. CIVIL ENGINEERING - ENGINEERING MATH 2022

| FRESHMAN | | SOPHOMORE | | JUNIOR | | SENIOR | |
|--|--|--|--|--|---|---|--|
| <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> |
| CVEEN 1000 Intro to Civil & Environmental Engineering F 2 | CVEEN 1400 Computer-Aided Design SP 3 | CVEEN 2000 Seminar F 0.5 | CVEEN 2140 Strength of Materials F/SP 3 | CVEEN 3210 Structural Loads & Analysis (QI) F/SP 3 | CVEEN 3100 Technical Communication (CW) F/SP 3 | CVEEN 4900 Professional Practice & Design I F/SP 3 | CVEEN 4910 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 4900 & 2 Design Technical Electives ↓ | |
| MATH 1310 Engineering Calculus I (QR) F/SP 4 | MATH 1320 Engineering Calculus II F/SP/SU 4 | CVEEN 2010 Statics F/SP 3 | CVEEN 2750 Computer Tools SP 2 | CVEEN 3410 Hydraulics (QI) 3 CVEEN 3415 Lab 1 | CVEEN 3310 Geotech I (QI) 3 CVEEN 3315 Lab 1 | Design Technical Elective F/SP 3 | Technical Elective F/SP 3 |
| | MATH 1310 ↓ | | CVEEN 2010, PHYS 2210 & MATH 2250 ↓ | CVEEN 2140 & 2310 ↓ | CHEM 1210 & CVEEN 2140 ↓ | | |
| General Ed. Requirement F/SP/SU 3 | PHYS 2210 Physics for Sci & Engineers I F/SP/SU 4 | CVEEN 2320 Engineering Economics F/SP 2 | ME EN 2030 Dynamics F/SP/SU 3 | CVEEN 3510 Materials 3 CVEEN 3515 Lab 1 | CVEEN 3610 Environmental 3 CVEEN 3615 Lab 1 | Technical Elective F/SP 3 | Technical Elective F/SP 3 |
| WRTG 1010 ↓ | See catalog for individual prerequisites ↓ | | | CVEEN 2310 & 2140 ↓ | | | |
| WRTG 2010 Intermediate Writing F/SP/SU 3 | CHEM 1220 Gen Chemistry II or PHYS 2220 Physics for Sci & Engineers II F/SP/SU 4 | CVEEN 2310 Probability & Statistics F/SP 3 | General Ed. Requirement/DV F/SP/SU 3 | CVEEN 3520 Transportation F/SP 3 | Design Technical Elective F/SP 3 | Technical Elective F/SP 3 | General Ed. Requirement F/SP/SU 3 |
| MATH 1050 ↓ | See catalog for individual prerequisites ↓ | MATH 1320 & PHYS 2210 ↓ | | | | | |
| CHEM 1210 Gen Chemistry I 4 CHEM 1215 Lab 1 | CHEM 1225 Gen Chemistry II Lab or PHYS 2215 Physics for Sci & Engineers I Lab or PHYS 2225 Physics for Sci & Engineers II Lab F/SP/SU 1 | MATH 2250 Diff Equations & Linear Algebra F/SP/SU 4 | Additional Science Requirement F/SP/SU 3 | General Ed. Requirement F/SP/SU 3 | General Ed. Requirement F/SP/SU 3 | American Institutions F/SP/SU 3 | General Ed. Requirement/IR F/SP/SU 3 |
| | | MATH 1060 ↓ | | | | | |
| | | MG EN 2400 Surveying F/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 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 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

Neutron Based
Engineering
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+