



# Construction Engineering

COLLEGE OF ENGINEERING | THE UNIVERSITY OF UTAH



## ***STUDENT HANDBOOK*** **2020-2021**

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## **DEPARTMENT**

Students enrolling in the Construction Engineering program should make note of the following Department and degree titles:

Department Name: Civil & Environmental Engineering

Degrees offered: Bachelor of Science in Civil Engineering

Bachelor of Science in Construction Engineering

Minor offered: Nuclear Engineering

**VISION STATEMENT:** Pursuit of excellence in preparing engineers to provide innovative solutions to the world's challenges in sustaining the environment and the infrastructure.

**MISSION STATEMENT:** Provide high quality education in engineering and leadership, life-long learning opportunities, and innovation for the benefit of the State of Utah and the world.

# B.S. CONSTRUCTION ENGINEERING – ENGINEERING MATH 2020

| <u>FRESHMAN</u>  |  | <u>SOPHOMORE</u>   |  | <u>JUNIOR</u>   |  | <u>SENIOR</u>  |   |
|--|--|--|--|---|--|--|---|
| Fall (17 hrs)  | Spring (16 hrs)  | Fall (16.5 hrs)  | Spring (16 hrs)  | Fall (14 hrs)   | Spring (15 hrs)  | Fall (15 hrs)  | Spring (15 hrs)   |
| <b>CVEEN 1000</b><br>Intro to Civil & Environmental Engineering<br>F 2 | <b>CVEEN 1400</b><br>Computer-Aided Design<br>SP 3   | <b>CVEEN 2000</b><br>Seminar<br>F 0.5                            | CVEEN 2010 ↓<br><b>CVEEN 2140</b><br>Strength of Materials<br>F/SP 3 | CVEEN 2140 ↓<br><b>CVEEN 3210</b><br>Structural Loads & Analysis (QI)<br>F/SP 3   | WRTG 2010 ↓<br><b>CVEEN 3100</b><br>Technical Communication (CW)<br>F/SP 3 | CVEEN 3210 ↓<br><b>CVEEN 4221</b><br>Concrete I<br>F 3 | CVEEN 3100, 3700, 4221, 5720, & 1 Design Tech Ele ↓<br><b>CVEEN 4920</b><br>Design Capstone<br>SP 3 |
| MATH (1050 & 1060) or MATH 1080 ↓                                      | MATH 1310 ↓  | MATH 1310 & PHYS 2210 ↓  |  | CVEEN 2140 & 2310 ↓   | CVEEN 2140 & 2310 ↓  | CVEEN 3100 ↓   | CVEEN 3210 ↓  |
| <b>MATH 1310</b><br>Engineering Calculus I (QR)<br>F/SP 4              | <b>MATH 1320</b><br>Engineering Calculus II<br>F/SP/SU 4   | <b>CVEEN 2010</b><br>Statics<br>F/SP 3                           | <b>CVEEN 2300</b><br>Engineering Economics<br>F/SP 2                 | <b>CVEEN 3310</b><br>Geotech I (QI) 3<br><b>CVEEN 3315</b><br>Lab 1   | <b>CVEEN 3520</b><br>Transportation<br>F/SP 3                              | <b>CVEEN 5720</b><br>Project Scheduling<br>F 3         | <b>CVEEN 5780</b><br>Facade I<br>SP 3   |
|  | MATH 1310 ↓  | MATH 1310 ↓  | MATH 1310 ↓  | CVEEN 2140 & 2310 ↓   |  | CVEEN 3310 & 3315 ↓                                    | CVEEN 3210 ↓  |
| <b>General Ed. Requirement</b><br>F/SP/SU 3                            | <b>PHYS 2210</b><br>Physics for Sci & Engineers I<br>F/SP/SU 4   | <b>CVEEN 2310</b><br>Probability & Statistics<br>F/SP 3          | <b>CVEEN 2750</b><br>Computer Tools<br>SP 2                          | <b>CVEEN 3510</b><br>Materials 3<br><b>CVEEN 3515</b><br>Lab 1  | <b>CVEEN 3710</b><br>Contract Specifications<br>SP 3                       | <b>CVEEN 5740</b><br>Horizontal Construction<br>F 3    | <b>CVEEN 5790</b><br>Vertical Construction<br>SP 3  |
| WRTG 1010 ↓  | See catalog for individual prerequisites ↓   | MATH 1060 ↓  |  | CVEEN 2750 ↓  |  |  |   |
| <b>WRTG 2010</b><br>Intermediate Writing<br>F/SP/SU 3                  | <b>CHEM 1220</b><br>Gen Chemistry II<br>or<br><b>PHYS 2220</b><br>Physics for Sci & Engineers II<br>F/SP/SU 4  | <b>MG EN 2400</b><br>Surveying<br>F/SU 3                         | <b>General Ed. Requirement/DV</b><br>F/SP/SU 3                       | <b>CVEEN 3700</b><br>Principles of Construction Eng.<br>F 3   | <b>Design Technical Elective</b><br>F/SP 3                                 | <b>Technical Elective</b><br>F/SP 3                    | <b>Technical Elective</b><br>F/SP 3   |
| MATH 1050 ↓  | See catalog for individual prerequisites ↓   | MATH 1320 & PHYS 2210 ↓  |  |   |  |  |   |
| <b>CHEM 1210</b><br>Gen Chemistry I 4<br><b>CHEM 1215</b><br>Lab 1     | <b>CHEM 1225</b><br>Gen Chemistry II Lab<br>or<br><b>PHYS 2215</b><br>Physics for Sci & Engineers I Lab<br>or<br><b>PHYS 2225</b><br>Physics for Sci & Engineers II Lab<br>F/SP/SU 1 | <b>MATH 2250</b><br>Diff Equations & Linear Algebra<br>F/SP/SU 4 | <b>ARCH 1615</b><br>Intro to Architecture (FF)<br>F/SP 3             |   | <b>General Ed. Requirement</b><br>F/SP/SU 3                                | <b>American Institutions</b><br>F/SP/SU 3              | <b>General Ed. Requirement/IR</b><br>F/SP/SU 3  |
|  |  | <b>ECON 2010</b><br>Microeconomics (BF)<br>F/SP/SU 3             | <b>^ GEO 1100</b><br>Evolving Earth<br>F/SP 3                        | <b>Recommended General Education Courses</b><br>LEAP 1501 Social & Ethical Engineering (BF) - Fall only<br>LEAP 1500 Humanities for Engineers (HFDV) - Spring only<br><br>^ GEO 1100 can be substituted with<br>GEO 1110 & 1115—Earth Systems & Lab (4) |  |  |   |

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

# TECHNICAL ELECTIVE COURSES

Students must complete **three** technical elective courses.

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

1. Complete at least **one** course from the Primary section.
  2. Complete at least **one** Design course from the Secondary Section. These are designated by a **shaded box**. *Example: CVEEN 5510*
- As long as these requirements are satisfied, you may take the remaining **one** technical elective from either section.

## PRIMARY TECHNICAL ELECTIVES

CVEEN 3100 ↓

**CVEEN 5710**  
Cost Estimation &  
Proposal Writing  
F 20/22 3

CVEEN 3100 ↓

**CVEEN 5730**  
Project Management  
& Contract Admin.  
SP 20/22 3

CVEEN 3100 ↓

**CVEEN 5750**  
Engineering Law &  
Contracts  
SU 20/22 3

## SECONDARY TECHNICAL ELECTIVES

### Structures

CVEEN 3210 ↓

**CVEEN 4222**  
Steel I  
SP 3

CVEEN 3210 ↓

**CVEEN 5240**  
Reinforced  
Timber/Masonry  
F 4

### Transportation

CVEEN 3520 ↓

**CVEEN 5510**  
Highway Design  
SP 3

### Geotech & Materials

CVEEN 3310 & 3315 ↓

**CVEEN 5305**  
Introduction to  
Foundations  
F 3

CVEEN 3510 & 3515 ↓

**CVEEN 5500**  
Sustainable  
Materials  
SP 3

### Architecture

**ARCH 6371**  
Intensive Materials  
& Construction  
F 3

### Other (Max 1)

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

## **COMPUTER REQUIREMENT**

All incoming undergraduate students in the Department of Civil and Environmental Engineering are required to have a laptop. It is the student's responsibility to ensure that his or her laptop meets the following minimum requirements:

### **HARDWARE**

#### Processor

Intel® Core™ i5, or i7 or equivalent AMD processors

#### Memory

8.0 GB RAM or greater

#### Hard Drive

512 GB or greater

#### Graphics

Minimum: Integrated video card

Recommended: Dedicated video card

#### Network Card

Integrated Wireless 802.11ac

### **SOFTWARE**

#### Operating System

Windows 10

Mac users can use Boot Camp, VMware, VirtualBox, or Parallels, however, these options may require more powerful machines to run.

#### Microsoft Office

<https://software.utah.edu/microsoft.php>

(free to download for students)

#### AutoCAD & Revit

<http://www.autodesk.com/education/home>

(student version free to download)

***\*Additional software may be required for other classes.***

***\*Tablets are not recommended.***

## **MATH AND SCIENCE ACCREDITATION HOUR REQUIREMENT**

All students must complete a minimum of 30 credit hours of math and science courses. If students do not meet this requirement, they will need to take additional math and science courses to meet the required hours.

## **COURSE GRADE REQUIREMENTS**

In order to progress within the program and graduate, the Department requires the following grades:

A grade of "C" or higher must be met for the following courses:

- All Mathematics (MATH 1210/1310, 1220/1320, 2210, 2250)
- All Chemistry (CHEM 1210, 1215, 1220, 1225)
- All Physics (PHYS 2210, 2215, 2220, 2225)
- CVEEN 2010, 2140, 2300, and 2310

For all other CVEEN courses, a grade of "C-" or higher is required.

## **GPA AND ENGINEERING GPA**

The University requires all students to maintain a cumulative GPA of 2.00 or higher. The Department requires all students to maintain an engineering GPA (EGPA) of 2.50 or higher. Engineering GPA is defined as courses counted towards the major with the exception of the following:

- All general education courses (e.g., LEAP 1500/1501)
- All seminars (e.g., CVEEN 1000/2000)

For repeated EGPA courses, the second letter grade received will be counted as the official grade for the EGPA calculation. Please see the policy on repeated courses.

## **UPPER-DIVISION TRANSFER CREDIT POLICY**

A maximum of 3 courses (and their accompanying labs) at the 3000-level may be transferred into the program (9-12 credits max). No technical electives or additional upper-division credits will be accepted.

## **REPEAT POLICY**

A student can take an engineering GPA (EGPA) course for grade only twice at the University. Students withdrawing from an EGPA course are allowed three attempts, including the withdrawal. Any student who takes a required class twice and does not have a satisfactory grade the second time, will be removed from major status and will not be allowed to take any new CVEEN classes until they meet with an academic advisor, develop a plan, and petition the Undergraduate Committee requesting that a third attempt at the class be allowed. The Undergraduate Committee, after reviewing the petition and other relevant facts, shall make the final decision to allow or not allow the further attempt and shall communicate that decision to the student in writing.

Attempts of courses taken at transfer institutions count as one attempt. This means a student may take the course only one time at the University of Utah.

When retaking an EGPA course, if the course was taken at the University of Utah, it must be retaken at the University of Utah. For example, students cannot count a grade obtained in a class taken at another institution to replace a low grade obtained in a class previously taken at the University of Utah.

## **ACADEMIC PROBATION**

A student who fails to maintain an engineering grade point average (EGPA) of 2.50 or higher will be removed from major status and will be placed on academic probation. While on probation, students will not be allowed to take any new CVEEN classes and will have three consecutive semesters to retake courses or take additional non-CVEEN courses to bring their EGPA to 2.50 or higher. While on academic probation, the student will meet with an academic advisor at the end of every semester to review their progress. If after the three semesters (e.g., fall, spring, summer), the student fails to raise their EGPA to 2.50 or higher, their progress will be evaluated by the Undergraduate Committee and, if no progress is shown, the student will be dismissed from the program. Students that have been placed on probation

for more than 3 semesters, even if non-consecutive, will also be evaluated by the Undergraduate Committee to determine if they should be allowed to remain in the program.

A student who fails to maintain a cumulative grade point average of 2.00 or higher will also be on probation with the Department.