



Department of
Civil & Environmental Engineering
THE UNIVERSITY OF UTAH



STUDENT HANDBOOK
2019-2020

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DEPARTMENT

Students enrolling in the Civil 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.

The Bachelor of Science Degree in Civil Engineering at the University of Utah is accredited by the Engineering Accreditation Commission of ABET (www.abet.org).

B.S. CIVIL ENGINEERING - ENGINEERING MATH 2019

<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)
CVEEN 1000 Intro to Civil & Environmental Engineering F 2	CVEEN 1400 Computer-Aided Design SP 3	CVEEN 2000 Seminar F 0.5	CVEEN 2010 ↓ CVEEN 2140 Strength of Materials F/SP 3	CVEEN 2140 ↓ CVEEN 3210 Structural Loads & Analysis (QI) F/SP 3	WRTG 2010 ↓ CVEEN 3100 Technical Communication (CW) F/SP 3	CVEEN 3100 ↓ CVEEN 4900 Professional Practice F/SP 3	CVEEN 4900 & 2 Design Technical Electives ↓ CVEEN 4910 Design Capstone F/SP 3
MATH (1050 & 1060) or MATH 1080 ↓ MATH 1310 Engineering Calculus I (QR) F/SP 4	MATH 1310 ↓ MATH 1320 Engineering Calculus II F/SP/SU 4	MATH 1310 & PHYS 2210 ↓ CVEEN 2010 Statics F/SP 3	MATH 1310 ↓ CVEEN 2750 Computer Tools SP 2	CVEEN 2140 & 2310 ↓ CVEEN 3410 Hydraulics (QI) 3 CVEEN 3415 Lab 1	CVEEN 2140 & 2310 ↓ CVEEN 3310 Geotech I (QI) 3 CVEEN 3315 Lab 1	Design Technical Elective F/SP 3	Technical Elective F/SP 3
General Ed. Requirement F/SP/SU 3	MATH 1310 ↓ PHYS 2210 Physics for Sci & Engineers I F/SP/SU 4	CVEEN 2300 Engineering Economics F/SP 2	CVEEN 2010, PHYS 2210 & MATH 2250 ↓ ME EN 2030 Dynamics F/SP/SU 3	CVEEN 2140 & 2310 ↓ CVEEN 3510 Materials 3 CVEEN 3515 Lab 1	CHEM 1210 & CVEEN 2140 ↓ CVEEN 3610 Environmental 3 CVEEN 3615 Lab 1	Technical Elective F/SP 3	Technical Elective F/SP 3
WRTG 1010 ↓ WRTG 2010 Intermediate Writing F/SP/SU 3	See catalog for individual prerequisites ↓ CHEM 1220 Gen Chemistry II or PHYS 2220 Physics for Sci & Engineers II F/SP/SU 4	MATH 1310 ↓ CVEEN 2310 Probability & Statistics F/SP 3	General Ed. Requirement/DV F/SP/SU 3	CVEEN 2140 & 2310 ↓ 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 ↓ CHEM 1210 Gen Chemistry I 4 CHEM 1215 Lab 1	See catalog for individual prerequisites ↓ 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 1320 ↓ 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? 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 ↓

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 ↓

CVEEN 5510

Highway Design SP 3

CVEEN 3520 ↓

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 ↓

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 20/22 3

CVEEN 3100 ↓

CVEEN 5730

Project Management &
Contract Administration SP 20/22 3

CVEEN 3100 ↓

CVEEN 5720

Project Scheduling F 3

CVEEN 3100 ↓

CVEEN 5750

Engineering Law &
Contracts SU 20/22 3

Nuclear Engineering

CHEM 1220, PHYS 2220, MATH 1220 ↓

NUCL 3000

Nuclear Principles in
Engineering & Science F 3

NUCL 3000 ↓

NUCL 3100

Neutron Based
Engineering SP 3

Other (Max 1)

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

COMPUTER REQUIREMENT

All incoming undergraduate students in the Department of Civil and Environmental Engineering are required to have a laptop. Students wanting to apply Financial Aid funds to their computer purchase should contact the Financial Aid and Scholarship Office and complete the 'Computer Purchase Allowance Request' form. Once approved, it will allow the cost of the purchase to be included in the student's cost of attendance and allow Financial Aid funds to cover the expense.

MATH AND SCIENCE ACCREDITATION HOUR REQUIREMENT

All students must complete a minimum of 32 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.

COURSES OUTSIDE UNIVERSITY OF UTAH

Upper division courses used to fulfill the Department requirements for graduation, must be taken at the University of Utah. Variances to this policy must be approved prior to enrolling in the course.

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.

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. Transfer students who have failed a class twice or more at another institution must meet with their academic advisor before registering for classes and file a petition to the Undergraduate Committee. In all cases, 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.

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.