



CIVIL AND ENVIRONMENTAL ENGINEERING

JOHN AND MARCIA PRICE COLLEGE OF ENGINEERING
THE UNIVERSITY OF UTAH



STUDENT HANDBOOK

2023-2024

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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 2023

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 (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 2310 Probability & Statistics F/SP 3	ME EN 2030 Dynamics F/SP/SU 3	CVEEN 3510 Materials (QI) 3 CVEEN 3515 Lab 1	CVEEN 3610 Environmental 3 CVEEN 3615 Lab 1	Technical Elective F/SP 3	Technical Elective F/SP 3
WR TG 1010 ↓	See catalog for individual prerequisites ↓			CVEEN 2310 & 2140 ↓			
WR TG 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 2320 Engineering Economics F/SP 2	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 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+

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, 2310, and 2320

For all other CVEEN and major related 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.

GRADUATE LEVEL COURSES

High achieving undergraduates (Engineering GPA of a 3.20 or higher), particularly those considering graduate studies, are strongly encouraged to enroll in 6000 level courses for one or more of their technical electives. Students must complete the 'Request to Enroll in Graduate Courses as an Undergraduate' form in addition to obtaining the course instructor's permission. Students who are continuing on to graduate school can have a maximum of six (6) credit hours taken as an undergraduate counted toward their graduate degree as long as the courses are not being used for their undergraduate degree.

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 a CVEEN or major-related 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 within the Department.

CVEEN ACADEMIC MISCONDUCT POLICY

BACKGROUND

This document describes the policies and procedures used by the Department of Civil & Environmental Engineering relating to academic misconduct of any student enrolled in a CVEEN course or NUCL course.

Definitions of academic misconduct are presented in the Code of Students Rights and Responsibilities¹. The following departmental policy follows the University Policy 6-400, Section V: Student Academic Conduct² and the Appeals Procedures in the College of Engineering Guidelines³ to establish a consistent and clear message on our academic misconduct policy.

CVEEN POLICY ON ACADEMIC MISCONDUCT

This Departmental policy applies to any course listed as CVEEN XXXX (subsequently referred to as a CVEEN course) or NUCL XXXX (subsequently referred to as a NUCL course). Two documents have primacy; this governance document and information contained in each CVEEN course syllabus. It is the student's responsibility to understand the definitions and consequences of academic misconduct.

Definition of Academic Misconduct

As defined in the Student Code,

'Academic misconduct' includes, but is not limited to, cheating, misrepresenting one's work, inappropriately collaborating, plagiarism, and fabrication or falsification of information, as defined further below. It also includes facilitating academic misconduct by intentionally helping or attempting to help another to commit an act of academic misconduct.

Please refer to University Policy 6-400, Section I: General Provision and Definitions for a detailed outline of each of these terms.

Each CVEEN or NUCL course instructor provides detailed information regarding academic misconduct for specific course activities in the course syllabus. If students have questions about this information, they should seek clarification from the instructor rather than seek an interpretation from a third-party. For example, if an instructor has a rule banning cell phone usage during an exam then texting or using a cell phone, even as a calculator, would be seen as academic misconduct.

Sanctions

Instructors have two options that can be exercised when an instance of academic misconduct has been committed:

¹ <https://regulations.utah.edu/academics/6-400.php>

² <https://regulations.utah.edu/academics/6-400.php>

³ <https://www.coe.utah.edu/students/current/semester-guidelines/>

1. Fail-the-course Option

The default sanction for an academic misconduct offense is a failing grade for the course. Thus, unless explicitly stated in any CVEEN course syllabus, academic misconduct means receiving an E grade for the course. This sanction will be placed in the student's departmental file and the faculty member will notify the chair of the student's home department and the senior vice president for academic affairs of the academic misconduct and the circumstances which the faculty member believes support the imposition of a failing grade. Note that a failing grade sanction still applies even for students who withdraw from a course after a sanction has been imposed.

2. Less than Fail-the-course Option

As defined in a specific CVEEN course syllabus, or due to instructor discretion, an academic misconduct sanction may be relaxed from a failing course grade. In such cases, the individual will receive a zero for the particular assignment or activity (homework, exam, paper, laboratory session, etc.). The faculty member will report the misconduct to the student's home department chair as well as dean of the student's home college.

Two instances of academic misconduct by a student will result in a recommendation for dismissal from their respective minor and/or degree program or revocation of a degree or certificate. These matters will be referred to the Price College of Engineering's Academic Appeals Committee for proceedings.

Reporting

The CVEEN Department tracks an individual's academic misconduct for all its courses. Information regarding prior offenses is available to the Undergraduate Committee Chair, the Chair of the Graduate Committee, the CVEEN Chair, and CVEEN office staff. This information is protected per established FERPA guidelines.

Appeal of Sanction

A student has the right to appeal within fifteen (15) business days of receiving notice of the academic sanction. Please refer to University Policy 6-400: Code of Student Rights and Responsibilities, Part V.B.5. and the College of Engineering's Academic Appeals and Misconduct Policy for guidance in the appeals process.

STUDENT RESPONSIBILITIES

It is the responsibility of all students taking CVEEN or NUCL courses to:

- a. Read and understand the CVEEN Academic Misconduct Policy Statement.
- b. Read and understand the academic misconduct definitions associated with each specific course and course syllabus, recognizing that acceptable procedures may be different in each class.
- c. Not engage in any activity that could constitute academic misconduct as defined in this policy and notify the instructor immediately if they suspect academic misconduct is occurring