## B.S. CIVIL ENGINEERING - TRADITIONAL MATH 2023

### FRESHMAN
- **Fall** (17 hrs)
  - CVEEN 1000: Intro to Civil & Environmental Engineering (13 hrs)
  - PHYS 2210: Physics for Sci & Engineers I (QR) (4 hrs)
  - MATH 1210: Calculus I (QR) (4 hrs)
  - CHEM 1220: Calculus II (4 hrs)
  - WRTG 1010: Intermediate Writing (1 hr)
  - MW 1050 or MATH 1000 (if needed) (1 hr)
  - General Ed. Requirement (1 hr)
  - Total Required Credit Hours: 17.0 hrs

- **Spring** (16 hrs)
  - CVEEN 1400: Computer-Aided Design (3 hrs)
  - MATH 1220: Calculus II (4 hrs)
  - PHYS 2210: Physics for Sci & Engineers I (QR) (4 hrs)
  - CHEM 1220: Calculus II (4 hrs)
  - WRTG 1010: Intermediate Writing (1 hr)
  - MW 1050 or MATH 1000 (if needed) (1 hr)
  - General Ed. Requirement (1 hr)
  - Total Required Credit Hours: 16.0 hrs

### SOPHOMORE
- **Fall** (14.5 hrs)
  - CVEEN 2000: Seminar (2 hrs)
  - CVEEN 2140: Strength of Materials (3 hrs)
  - MATH 1210: Calculus I & PHYS 2210 (3 hrs)
  - CHEM 1225: Gen Chemistry II Lab (1 hr)
  - CHEM 1225: Gen Chemistry II Lab (1 hr)
  - MATH 1220: Calculus II (4 hrs)
  - ME EN 2030: Dynamics (3 hrs)
  - GEOG 1010: Environmental (3 hrs)
  - Total Required Credit Hours: 14.5 hrs

- **Spring** (18 hrs)
  - CVEEN 2310: Probability & Statistics (3 hrs)
  - ME EN 2310: Materials (3 hrs)
  - CHEM 2210: Calculus III (3 hrs)
  - CHEM 2250: Diff Equations & Linear Algebra (4 hrs)
  - CHEM 2250: Diff Equations & Linear Algebra (4 hrs)
  - MG EN 2400: Surveying (3 hrs)
  - Additional Science Requirement (3 hrs)
  - Total Required Credit Hours: 18.0 hrs

### JUNIOR
- **Fall** (17 hrs)
  - CVEEN 2410: Structural Loads & Analysis (QI) (3 hrs)
  - CVEEN 3230: Fluid Mechanics (3 hrs)
  - MATH 1210: Calculus I & PHYS 2210 (3 hrs)
  - CHEM 1225: Gen Chemistry II Lab (1 hr)
  - CHEM 1225: Gen Chemistry II Lab (1 hr)
  - MATH 2220: Calculus III (3 hrs)
  - ME EN 2310: Materials (3 hrs)
  - Total Required Credit Hours: 17.0 hrs

- **Spring** (17 hrs)
  - CVEEN 2750: Computer Tools (3 hrs)
  - ME EN 2310: Materials (3 hrs)
  - CHEM 2210: Calculus III (3 hrs)
  - CHEM 2250: Diff Equations & Linear Algebra (4 hrs)
  - CHEM 2250: Diff Equations & Linear Algebra (4 hrs)
  - MG EN 2400: Surveying (3 hrs)
  - Additional Science Requirement (3 hrs)
  - Total Required Credit Hours: 17.0 hrs

### SENIOR
- **Fall** (15 hrs)
  - CVEEN 2800: Professional Practice & Design I (3 hrs)
  - CVEEN 2800: Professional Practice & Design I (3 hrs)
  - CHEM 2310: Calculus III (3 hrs)
  - CHEM 2310: Calculus III (3 hrs)
  - MG EN 2400: Surveying (3 hrs)
  - Additional Science Requirement (3 hrs)
  - Total Required Credit Hours: 15.0 hrs

- **Spring** (15 hrs)
  - CVEEN 2800: Professional Practice & Design I (3 hrs)
  - CVEEN 2800: Professional Practice & Design I (3 hrs)
  - CHEM 2310: Calculus III (3 hrs)
  - CHEM 2310: Calculus III (3 hrs)
  - MG EN 2400: Surveying (3 hrs)
  - Additional Science Requirement (3 hrs)
  - Total Required Credit Hours: 15.0 hrs

### Total Required Credit Hours: 129.5

### Additional Notes:
- 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

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

**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 5605 Water and Wastewater Treatment 3
- CVEEN 5610 Water Chemistry 3

**Structures**
- CVEEN 4221 Concrete I 3
- CVEEN 4222 Steel I 3
- CVEEN 5230 Steel II 3
- CVEEN 5240 Reinforced Timber/Masonry 3

**Geotech & Materials**
- CVEEN 5305 Introduction to Foundations 3
- CVEEN 5500 Sustainable Materials 3
- CVEEN 5510 Nuclear Principles in Engineering & Science F/SP 3
- CVEEN 5520 Project Scheduling 3

**Transportation**
- CVEEN 5510 Highway Design SP 3
- CVEEN 5550 Engineering Hydrology F 3

**Water Resources**
- CVEEN 5420 Open-Channel SP 3
- CVEEN 5440 Radiological Interactions SP 3
- CVEEN 5920 Special Topics 3

Caveat: Semester availability is subject to change at the discretion of the department and does not create a binding contractual nexus or obligation between the student and the University of Utah.