

PROGRAM OVERVIEW

Earning a bachelor of science in civil engineering is the start of a long and successful career. Given the increase in population, the continuing development of second- and third-world countries and the eventual degradation of city infrastructure, civil engineers will always be in demand. A degree in civil engineering opens the door to many areas of study including transportation and highways, hydrology and wastewater systems, structures and bridges, environmental and sustainability issues, and geotechnical and earth design.

ACADEMIC ADVISING

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GRADUATION REQUIREMENTS & POLICIES

All CU Denver Engineering students are required to complete the following minimum general graduation requirements:

1. Complete a minimum of 130 semester hours.
2. Achieve a minimum 2.0 CU cumulative grade point average (GPA).
3. Complete all college and major requirements.
4. Residency: complete a minimum of 30 CU Denver hours in good standing at CU Denver.
5. Terminal Residency: complete at least the final two semesters as an enrolled CEDC student

PROGRAM REQUIREMENTS & POLICIES

Students are responsible for meeting with the faculty advisor in their department to confirm major requirements. Students completing the Civil Engineering B.S. Degree are required to complete the following minimum program requirements:

1. Complete 24 semester hours of **CU Denver Core Curriculum coursework**.
2. Complete 33 semester hours of Math, Chemistry, and Physics.
3. Take the Fundamentals of Engineering exam prior to graduation.
4. Achieve a minimum 2.0 CU cumulative grade point average (GPA) in all CVEN courses.

| Courses | Credits | Notes |
|---|-----------|--|
| * Course prerequisites change regularly. Students are responsible for consulting advisors and the class schedule in the student portal for prerequisite information. * | | |
| Required CU Denver Core Curriculum Coursework | 24 | |
| Intellectual Competencies: ENGL 1020+ENGL 2030 | 6 | |
| Humanities and the Arts | 6 | |
| Behavioral Sciences | 3 | |
| Social Sciences | 3 | |
| Cultural Diversity | 3 | |
| International Perspectives | 3 | |
| Required Math, Chemistry, and Physics Coursework | 33 | |
| MATH 1401 Calculus I | 4 | |
| MATH 2411 Calculus II | 4 | |
| MATH 2421 Calculus III | 4 | |
| MATH 3195 Linear Algebra and Differential Equations | 4 | or MATH 3191 and MATH 3200 |
| CVEN 3611 Statistics for Engineers | 3 | or MATH 3800 |
| ENGR 1130 Engineering Chemistry | 5 | or CHEM 2031 and CHEM 2038 with advisor approval |
| PHYS 2311 Calculus-based Physics I | 4 | |
| PHYS 2321 Calculus-based Physics I Lab | 1 | |
| PHYS 2331 Calculus-based Physics II | 4 | |
| Required Engineering Coursework | 6 | |
| ENGR 1200 Freshman Design | 3 | |
| ENGR 1100 Computational Foundations of Innovation | 3 | |
| Required Civil Engineering Coursework | 46 | |
| CVEN 1025 Civil Engineering Graphics | 3 | |
| CVEN 1067 Intro to Civil Engineering | 1 | |
| CEMT 2100 Construction Management Fundamentals | 3 | |
| CVEN 2121 Analytical Mechanics I | 3 | |

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| CVEN 2214 Surveying for Engineers | 1 | or CVEN 2212 |
| CVEN 3200 Computational Methods for Civil Engineers | 3 | |
| CVEN 3111 Analytical Mechanics II | 3 | |
| CVEN 3121 Mechanics of Materials | 3 | |
| CVEN 3141 Intro to Structural Materials | 2 | |
| CVEN 3313 Fluid Mechanics | 3 | |
| CVEN 3323 Hydrosystems | 3 | |
| CVEN 3401 Intro to Environmental Engineering | 3 | |
| CVEN 3505 Structural Analysis | 3 | |
| CVEN 3602 Transportation Engineering | 3 | |
| CVEN 3718 Geotechnical Engineering | 3 | |
| CVEN 4000 Senior Seminar | 0 | |
| CVEN 4067 Senior Design | 3 | |
| CVEN 4077 Eng Economy / CVEN 4025 Civil 3d / CVEN 4087 Contracts | 3 | |
| Design Electives – Select 4 courses | 12 | See catalog for complete list of design course options |
| Technical Electives – Select 3 | 9 | Any 4000-level or higher CVEN or CEMT courses. Other math, science, or engineering courses may be allowed with advisor approval. |

TRANSFER NOTES AND A SAMPLE ACADEMIC PLAN OF STUDY

The following academic plan is a *sample* pathway to completing degree requirements for this major. Students should tailor this plan based on previously completed college coursework (e.g., AP, dual/concurrent enrollment, and transfer credit), course availability, and individual preferences related to course load, schedules, or add-on programs such as minors or double-majors. **Students deviating from this plan must fulfill course prerequisites and must meet with the faculty advisor in their department to confirm degree requirements.** Students intending to transfer to CU Denver to pursue a Mechanical Engineering B.S. degree should note the following:

1. The College of Engineering, Design, and Computing has a competitive admissions process. Student may be admitted to CU Denver but not the College of Engineering, Design, and Computing. Such students may work with CU Denver’s Academic Success and Advising Center to identify an alternative major and/or program of study.
2. Colorado Community College students should transfer to CU Denver once they have met the College of Engineering, Design, and Computing’s admission requirements. They should not necessarily complete an associate’s degree.

TO BE COMPLETED AT THE PARTICIPATING COLORADO COMMUNITY COLLEGE

| Year One | Semester 1 | |
|---|-----------------------------------|-----------|
| | | CRS |
| | MAT 121 College Algebra | 4 |
| | CHE 111 General College Chemistry | 5 |
| | ENG 121 English Communication I | 3 |
| Arts & Humanities (GT-AH1, AH2, AH3, or AH4) 1 of 2 | 3 | |
| | TOTAL | 15 |

| Semester 2 | | CRS |
|---|--------------|-----------|
| MAT 166 Pre-Calculus | | 5 |
| ENG 122 English Communication II | | 3 |
| BIO 111 or CHE 112 | | 5 |
| Arts & Humanities (GT-AH1, AH2, AH3, or AH4) 2 of 2 | | 3 |
| | TOTAL | 16 |

| Year Two | Semester 3 | |
|--|--|-----------|
| | | CRS |
| | MAT 201 Calculus I | 5 |
| | CSC 160 Computer Science I | 3 |
| | International Perspectives (see transferology.com) | 3 |
| Social & Behavioral Science (GT-SS1, SS2, or SS3) 1 of 2 | 3 | |
| | TOTAL | 14 |

| Semester 4 | | CRS |
|--|--------------|-----------|
| MAT 202 Calculus II | | 5 |
| PHY 211 Calc. Based Physics I | | 5 |
| Social & Behavioral Science (GT-SS1, SS2, or SS3) 2 of 2 | | 3 |
| | TOTAL | 13 |

TO BE COMPLETED AT UNIVERSITY OF COLORADO DENVER

| Year Three | Semester 5 | |
|--------------------------------------|--------------------------------------|-----------|
| | | CRS |
| | CVEN 1025 Civil Engineering Graphics | 3 |
| | CVEN 1067 Intro to Civil Engineering | 1 |
| | CVEN 2121 Analytical Mechanics I | 3 |
| | ENGR 1200 Freshman Design | 3 |
| | CEMT 2100 Construction Management | 3 |
| CVEN 3602 Transportation Engineering | 3 | |
| | TOTAL | 13 |

| Semester 6 | | CRS |
|---|--------------|-----------|
| Cultural Diversity Core Curriculum | | 3 |
| CVEN 3121 Mechanics of Materials | | 3 |
| CVEN 3141 Intro to Structural Materials | | 2 |
| CVEN 2214 Engineering Surveying | | 1 |
| CVEN 3602 Transportation Engineering | | 3 |
| MATH 2421 Calculus III | | 4 |
| | TOTAL | 16 |

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| Year Four | Semester 7 | CRS |
| | CVEN 3111 Analytical Mechanics II | 3 |
| | CVEN 3313 Fluid Mechanics | 3 |
| | CVEN 3505 Structural Analysis | 3 |
| | CVEN 3718 Geotechnical Engineering I | 3 |
| | PHYS 2321 Calculus-based Physics II | 4 |
| | TOTAL | 16 |

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| Year Five | Semester 9 | CRS |
| | CVEN 4025, CVEN 4077, or CVEN 4087 | 3 |
| | 1 Design Elective | 3 |
| | 1 Technical Elective | 3 |
| | CVEN 3611 Engineering Statistics | 3 |
| | TOTAL | 15 |

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|---|-------|----|
| Semester 8 | CRS | |
| CVEN 3323 Hydrosystems | 3 | |
| CVEN 3401 Intro to Environmental Engineering | 3 | |
| CVEN 3200 Civil Computing Methods | 3 | |
| MATH 3195 Linear Algebra & Differential Equations | 4 | |
| 1 Design Elective | 3 | |
| | TOTAL | 15 |

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| Semester 10 | CRS | |
| CVEN 4000 Senior Seminar | 0 | |
| CVEN 4067 Senior Design | 3 | |
| 2 Design Electives | 6 | |
| 1 Technical Elective | 3 | |
| | TOTAL | 12 |