An engineering degree opens the door to a wide range of careers and employment opportunities. The following is a brief summary of the engineering disciplines taught at CU Denver.

**Bioengineering** offers opportunities for interdisciplinary undergraduate training for a bachelor of science degree and graduate training for master of science and doctor of philosophy degrees. Our programs are uniquely integrated with the CU Anschutz Medical Campus. Students enjoy opportunities to learn from clinicians and engineers and to perform research or medical device design in world-class hospitals and clinical research labs. Bioengineering is one of the fastest growing job markets this decade, according to the Bureau of Labor Statistics. A degree in this area provides numerous opportunities to work in health care, biomedical industry, government regulatory agencies and academia.

**Civil engineering** offers an interesting and challenging career in the design and construction of buildings, bridges, dams, aqueducts and other structures; in transportation systems including highways, canals, pipelines, airports, rapid transit lines, railroads and harbor facilities; in the distribution of water and the regulation of rivers; in the development of water resources for urban use, industry and land reclamation; in the control of water quality through water purification and proper waste treatment; in the construction and contracting industry; and in the problems concerned with our physical environment and the growth of cities.

**Computer science** offers graduates the solid foundation needed for jobs in computing and enabling technology encompassing many areas across diverse fields such as healthcare, business, natural & applied sciences, mathematics and visual arts. Career paths in computer science involve designing and implementing software, devising new computer applications and developing effective ways to solve computing problems.

**Construction engineering and management** enables engineers, construction managers, architects, business majors and others to advance within a wide variety of construction career paths or to transition into the dynamic, exciting and high paying building industry. Graduates will find exciting, well-paid careers in the expanding and interconnected industry of architecture, engineering and construction as it embraces dynamic new concepts like smart cities, connected infrastructure and evolving value propositions.

**Electrical engineering** offers careers that include research in development of new electrical or electronic devices, instruments or products; design of equipment or systems; production and quality control of electrical products; and sales or management for private industry or government. There are numerous specialties within electrical engineering. Among them are the design and application of computer systems and digital engineering; electromagnetic fields and microwave devices; control systems; communication theory and signal processing; electrical integrated circuits and electron devices; and energy and power systems.

**Mechanical engineering** offers a wide range of interesting and challenging career opportunities in research, design, development, manufacturing, testing and marketing for either private industry or government. Mechanical engineers help develop a wide range of products such as engines, transmissions, compressors, pumps, oil field drilling rigs, missiles, space satellites, earth-moving equipment, container-manufacturing machines, medical equipment and many other products encountered in daily life.

**Educational Goals**

The College of Engineering, Design and Computing has established the following goals and objectives for undergraduate education:

- successful completion of the fundamental core courses, primarily lower division, in mathematics and the physical sciences
- successful completion of the required upper-division courses in engineering science, analysis and design
- successful completion of real-world engineering design projects that require integration of engineering, economic and social skills
- successful completion of a series of humanities and social science courses that introduce the student to societal problems and historical perspectives
- evidence, through close student/faculty contact, of development of professionalism, ethics and concern for the multifaceted human element of engineering
- evidence, from successful completion of a full engineering curriculum, of the ability to maintain professional competency through lifelong learning
- evidence, through successful completion of a series of communications-oriented courses and project presentations, of an ability to communicate effectively with professionals and laypersons alike
Accreditation

Freshman Year
Fundamentals taught in the freshman year are of critical importance in the more advanced classes. Special attention should be given to taking courses in the proper sequence. (Course requirements for freshmen are detailed in the typical curriculum given under each department.) All students are urged to consult their instructors whenever they are experiencing difficulties with course materials or for questions related to the class.

Internships
Internships are a way for students to gain professional experience while studying at CU Denver. Many internship positions lead to permanent employment opportunities upon graduation. Please contact the Experiential Learning Center at 303-315-7258 for information on the specific eligibility requirements.

Scholarships
The College of Engineering, Design and Computing awards various undergraduate scholarships to support the education of engineering students. These awards are provided through funds generously given by industry, alumni and other donors. Once admitted, students may view and apply for these scholarships through the student portal (https://passport.ucdenver.edu/login.php). Please note that the list of scholarships for which a particular student is eligible automatically populates. For additional information on other types of financial aid, consult the Tuition/Financial Aid FAQs section (http://catalog.ucdenver.edu/cu-denver/undergraduate/student-finances/).

College of Engineering, Design and Computing Admissions Information

Freshman Applicants
Students with fewer than 24 completed college credits at the time of application are evaluated as first-time freshmen.

Direct Admission to a Bachelor of Science* Program:
BS in Bioengineering
BS in Civil Engineering
BS in Construction Engineering and Management
BS in Computer Science
BS in Electrical Engineering
BS in Mechanical Engineering

- Minimum 3.0 cumulative high school GPA and have completed three (3) years of high school math with a minimum 2.7 GPA in the math courses.

*See below for bachelor of science in Construction Management and bachelor of science in Cybersecurity criteria.

Direct Admission to:
BA in Computer Science
BS in Construction Management
BS in Cybersecurity

- Minimum 2.5 cumulative high school GPA

Admission to Pre-Engineering
Students who do not meet the criteria for direct admission to a major will be considered for admission to pre-engineering with a major interest.

- Minimum 2.5 cumulative high school GPA

Admission to College of Liberal Arts and Sciences - Undeclared
- Students who do not meet the criteria for direct admission to a major or pre-engineering, but otherwise meet the university’s admission criteria, will be admitted to the College of Liberal Arts and Sciences as an undeclared major. These students should speak with their advisor to discuss the requirements to transfer into the College of Engineering, Design and Computing.

For International Students Who Did Not Graduate From a U.S. High School
The ACT/SAT requirement is waived; students must meet the minimum cumulative high school GPA requirement above and have completed three (3) years of high school math with a cumulative 2.7 GPA in math courses.

Transfer Applicants
For direct admission to the College of Engineering, Design and Computing, transfer applicants must meet the following criteria:

DIRECT ADMISSION TO:
BS in Bioengineering
BS in Civil Engineering
BS in Construction Engineering and Management
BS in Computer Science
BS in Electrical Engineering
BS in Mechanical Engineering

Criteria:
- Minimum 3.0 overall GPA with a grade of B- or better in Calculus I or
- Minimum 2.75 overall GPA and a minimum 2.5 GPA (based on most recent course attempts) in Calculus I, Calculus II, and Calculus-based Physics I with corresponding lab, with a grade of C- or better in each course.

NOTE: For admission into the computer science major, calculus-based Physics I is not required, but will be accepted.

DIRECT ADMISSION TO:
BA in Computer Science
BS in Construction Management

Criteria:
- Minimum 2.5 overall GPA
- Completion of at least one of the following courses with a grade of C or better: College Algebra, College Trigonometry, Pre-Calculus, Calculus I, or Calculus II

ADMISSION TO PRE-ENGINEERING
Students who do not meet the criteria for direct admission to a major will be considered for admission to pre-engineering with a major interest.
Criteria:

- Minimum 2.5 overall GPA
- Completion of at least one of the following courses with a grade of C or better: College Algebra, College Trigonometry, Pre-Calculus, Calculus I, or Calculus II

ADMISSION TO COLLEGE OF LIBERAL ARTS AND SCIENCES - UNDECLARED

- Transfer students who do not meet the criteria for direct admission to a major or pre-engineering, but otherwise meet the university's admission criteria, will be admitted to the College of Liberal Arts and Sciences as an undeclared major, or in the case of an IUT, remain in their current CU Denver school or college. These students should speak with their advisor to discuss the requirements to transfer into the College of Engineering, Design, and Computing.

Application Deadlines

UNDERGRADUATE

Fall: July 31
Spring: December 31
Summer: May 31

Please visit the College of Engineering, Design and Computing undergraduate admissions website (https://engineering.ucdenver.edu/undergraduate-programs/admissions/) for additional information.

(For Graduate Programs and information please refer to the Graduate (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/#departmentstext) catalog.)

College of Engineering, Design and Computing and Departments and Programs

- Bioengineering (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/bioengineering/)
  - Bioengineering, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/bioengineering/bioengineering-bs/)
- Civil Engineering (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/civil-engineering/)
  - Civil Engineering, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/civil-engineering/civil-engineering-bs/)
  - Construction Engineering and Management, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/construction-engineering/construction-engineering-management-bs/)
  - Construction Management, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/civil-engineering/construction-engineering-management-bs/)
  - Construction Management Minor (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/civil-engineering/construction-engineering-management-minor/)
- Human-Centered Transportation Minor (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/civil-engineering/human-centered-transportation-minor/)
- Computer Science and Engineering (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/computer-science-engineering/)
  - Computer Science, BA (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/computer-science-engineering/computer-science-bs/)
  - Computer Science, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/computer-science-engineering/computer-science-bs/)
  - Computer Science Minor (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/computer-science-engineering/computer-science-minor/)
- Cybersecurity, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/computer-science-engineering/cybersecurity-bs/)
- Electrical Engineering (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/electrical-engineering/)
  - Electrical Engineering, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/electrical-engineering/electrical-engineering-bs/)
  - Computer Engineering Minor (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/electrical-engineering/computer-engineering-minor/)
- Electrical Engineering Minor (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/electrical-engineering/electrical-engineering-minor/)
- Quantum Information Technology Undergraduate Certificate (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/electrical-engineering/quantum-information-technology-undergraduate-certificate/)
- Mechanical Engineering (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/mechanical-engineering/)
  - Mechanical Engineering, BS (http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-engineering-design-computing/mechanical-engineering/mechanical-engineering-bs/)

College of Engineering, Design and Computing Graduation Requirements

For additional information regarding graduation policies and procedures, please visit the Graduation (http://catalog.ucdenver.edu/cu-denver/undergraduate/graduation/) section of the catalog.

Hours
A minimum of 130 semester hours is required for the bachelor of science (BS) in civil engineering.

A minimum of 128 semester hours is required for the BS in bioengineering, computer science, construction engineering and management, electrical engineering, and mechanical engineering.

A minimum of 120 credit hours is required for the BS in construction management and the bachelor of arts (BA) in computer science.

Grade Point Average (GPA)
A minimum cumulative GPA of 2.0 is required for all courses attempted, for all required courses and for all courses taken within the student’s major department.

Hours in Residence
At least 30 semester hours of course work applicable to an undergraduate degree in engineering must be taken at CU Denver while a declared student in good standing at the College of Engineering, Design and Computing. Students must be enrolled in the college for at least the final two semesters prior to graduation.

Note: The electrical engineering program requires at least 40 hours of course work applicable to a bachelor of science degree in electrical engineering, which must be taken at CU Denver while a declared student in good standing at the College of Engineering, Design and Computing.

Major
Complete all requirements associated with your individual major. Please visit the individual program pages for major requirements.

Applying for Graduation
When a student in the College of Engineering, Design and Computing is within 30 hours of completing their degree, an appointment should be scheduled with an advisor to perform a 30-hour check. The 30-hour check is required before the student may graduate.

In addition to the above requirement, all students in the College of Engineering, Design and Computing must also meet with their advisor in the semester prior to the semester in which they wish to apply for graduation to ensure all academic and administrative requirements are met. Failure to do so may interfere with a student’s ability to graduate.

It is the sole responsibility of the student to understand and follow the policies, procedures, dates and deadlines of the CU Denver campus and the College of Engineering, Design and Computing. Failure to do so may obstruct a student’s ability to graduate.

Academic Honors
In recognition of superior scholarship, academic honors are awarded at the time of graduation based on the cumulative University of Colorado undergraduate GPA, including the final semester of coursework. To be eligible for honors, a student must have completed a minimum of 60 semester hours at the University of Colorado (on any CU campus). Grades earned at institutions outside of the CU system will not be considered. For Special Honors, a student must have earned a cumulative CU GPA of at least 3.800; for Honors, a GPA between 3.600 and 3.799 is required. Since grades earned during the semester of graduation are considered, academic honors are notated in the commencement program as “pending” and are officially recorded on the diploma and transcript if granted.

College of Engineering, Design and Computing Academic Policies

For additional information regarding policies and procedures, please visit the Records and Registration (http://catalog.ucdenver.edu/cu-denver/undergraduate/records-registration/) section and the Academic Policies and Procedures (http://catalog.ucdenver.edu/cu-denver/undergraduate/academic-policies-procedures/) section of the catalog.

Undergraduates Taking Graduate Coursework
With advisor approval, an undergraduate engineering student may be granted the opportunity to take graduate courses to be counted toward an undergraduate degree. For all College of Engineering, Design and Computing students, semester hours of graduate-level University of Colorado coursework taken as an undergraduate can be considered for credit toward a graduate degree. Depending on the program of study, between 6 and 12 credits of graduate-level coursework taken as an undergraduate may count toward a graduate degree. Only a grade of B (3.000) or above will be considered for graduate-level credit. All consideration of graduate work to be counted toward both an undergraduate and a graduate degree must be approved by an advisor.

Course Load/Restriction
Undergraduate students employed less than 10 hours per week should consider registering for courses as outlined in the departmental curricula. Additional courses may be allowed when there is satisfactory evidence that the student has the capability to handle the added load. Permission to take more than 19 hours may be granted by written petition and approval of the department chair and the dean’s office.

How to Declare or Change a Major or Minor
Students enrolled in the College of Engineering, Design and Computing who wish to change to another department within the college must apply for transfer by submitting a change of major form for undergraduate degree students, which can be found on the college website (http://engineering.ucdenver.edu) under > Policies and Forms. This form requires the approval of the new department.

To change from a BS in Computer Science to the BA in Computer Science, a student should complete the Intra-University Transfer (IUT) form Part I & II (https://www.ucdenver.edu/docs/librariesprovider234/student-
resources/iutform.pdf?sfvrsn=47fa1db9_4) and take it to the Computer Science office for approval.

Pre-engineering students who are eligible for admission to an engineering major should consult their advisor before submitting the IUT (https://www.ucdenver.edu/docs/librariesprovider234/student-resources/iutform.pdf?sfvrsn=47fa1db9_4).

Students enrolled in another school/college who wish to transfer into the College of Engineering, Design and Computing, must complete the IUT (https://www.ucdenver.edu/docs/librariesprovider234/student-resources/iutform.pdf?sfvrsn=47fa1db9_4) form. This form is submitted electronically to the appropriate department.

Those approved for an IUT will be admitted into the engineering program. Students who are not directly admitted to their program will be automatically considered for pre-engineering. Admission to Pre-Engineering does not guarantee admission to the major.

- a 2.750 (or higher) cumulative CU Denver GPA
- a 2.500 (or higher) GPA in Calculus I, Calculus II, and Calculus-based Physics I and the corresponding lab and no lower than a C- in any one of these courses.
- IUT guidelines are subject to change. Students are encouraged to meet with an engineering advisor to discuss the IUT process prior to submitting a request.

Retroactive Drop/Withdrawal

The university specifies the date up to which students may drop a course using the online course registration and schedule adjustment system. This date usually occurs at the end of the first week of classes for that semester. After this date, students must use a Schedule Adjustment Form to add or drop courses from their schedules. This form requires the signature of the course instructor. Beyond the end of the tenth week of the semester, this form also requires the signature of the department advisor in which the student is majoring. The student’s department will verify that the course being dropped is not a co-requisite to another course in which the student is enrolled that semester. If so, then the other course must also be dropped. A course withdrawal after the tenth week of the semester is at the discretion of the instructor and the student’s department, and signatures must be obtained from both. No course withdrawals will be approved after the end of the 14th week of the semester for any reason except unforeseen circumstances beyond the student’s control.

A complete withdrawal from the semester requires the same Schedule Adjustment Form, but it only requires the signature of the dean of the student’s college and the Financial Aid Office, if applicable.

Note: The student is responsible for informing the university offices of any change in schedule that may affect enrollment requirements for matters such as financial aid, scholarships, or international visas.

Grade Appeals

Final grades, as reported by instructors, are to be considered permanent and final. Grade changes will be considered only in cases of documented clerical error and must be approved by the chair.

Special Grading Options

The primary purpose for offering courses on a P+/P/F grade basis is to encourage students, especially juniors and seniors, to broaden their educational experience by electing challenging upper-division humanities and social sciences elective courses without serious risk to their academic records. In general, P+/P/F should be limited to 3000- or 4000-level humanities and social sciences courses. Students must submit the Pass+/Pass/Fail form within the posted deadlines. A maximum of 16 semester hours may be taken P+/P/F or S/U, including courses taken in the honors program.

No courses required for the completion of an engineering degree will be accepted for credit if taken with the university standard P+/P/F process. This includes all required and elective BIOL, CHEM, ENGR, MATH, and PHYS courses and any College of Engineering, Design and Computing discipline course (BIOE, CSCI, CVEN, CEMT, ELEC, and MECH). CU Denver core curriculum courses may be eligible, BUT because certain categories of core courses are not eligible (e.g., math and natural and physical sciences), students are strongly recommended to consult their advisor prior to requesting this grading option. If a student selects P+/P/F grading for an ineligible course, the student will be required to repeat it for a letter grade to satisfy degree requirements.

No courses required for the completion of an engineering degree will be accepted for credit if taken with the university standard P+/P/F process. This includes all required and elective BIOL, CHEM, ENGR, MATH, and PHYS courses and any College of Engineering, Design and Computing discipline course (BIOE, CSCI, CVEN, CEMT, ELEC, and MECH). CU Denver core curriculum courses may be eligible, BUT because certain categories of core courses are not eligible (e.g., math and natural and physical sciences), students are strongly recommended to consult their advisor prior to requesting this grading option. If a student selects P+/P/F grading for an ineligible course, the student will be required to repeat it for a letter grade to satisfy degree requirements.

Note: Effective Summer 2023 courses that were previously graded on the basis of Pass/Fail (P/F) are now graded with Satisfactory/Unsatisfactory (S/U). This is based on faculty approval of APS 1025 in May 2022. Students still have the option to use the P+ grading system (P+/P/F) by student selection for elective courses up to the maximum allowed by their program.

No Credit

An engineering student must request approval before enrolling for no credit (NC) for any course. Required courses must be taken for credit. Once a course has been taken NC, the course cannot be repeated for credit.

Incomplete Grade

An incomplete may be given by the instructor for circumstances beyond the student’s control, such as a documented medical or personal emergency. When it is given, the student and the departmental office must be informed in writing, by the instructor, what the student is expected to do in order to remove the incomplete grade as well as the date by which the tasks are to be completed. The instructor will assign an "I" distinction. The student is expected to complete the course requirements (e.g., the final examination or term paper), within the established deadline and not to retake the entire course. The majority of course requirements (75%) must have been completed with a passing grade to be eligible for an incomplete. An "I" distinction will be converted
automatically to a grade of F after one year if the specified work is not completed.

It is the student’s responsibility to ensure that all courses marked as incomplete are officially completed before the tenth week of the student’s final semester in school.

**Attendance Policy**

Successful work in the College of Engineering, Design and Computing is dependent upon regular attendance in all classes. Students who are absent should make arrangements with instructors to make up the work missed. Students who for illness or other good reason miss any examination must notify the instructor no later than the end of the day on which the examination is given. Failure to do so may result in an F in the course.

**Course Repeat Policy**

Undergraduate students may not register for credit in a course in which they already have received a grade of C- or higher. For required courses (including technical electives): an F grade necessitates subsequent satisfactory completion of the course; students must repeat a prerequisite course in which a grade of D+ or lower was earned before moving on to the subsequent course.

If students do not successfully complete (C- or higher) an engineering class on the second attempt, they must obtain written approval from their major department to enroll for the course for the third time. When a course is retaken because of a D or F grade, both grades will appear on the transcript and both will be averaged into the GPA. Any exceptions to these policies must be made by written petition through the Office of the Dean.

**Academic Integrity and Discipline Policies**

CU Denver Campus Policy 7050, Academic Integrity (https://www.ucdenver.edu/faculty_staff/employees/policies/Policies%20Library/7XXX%20Student%20Affairs/7050%20-%20Academic%20Integrity.pdf), defines academic misconduct and sets forth a uniform process for handling allegations of student academic misconduct at CU Denver. As members of the CU Denver community, students are expected to know, understand, and comply with the ethical standards of the university. Examples of academic dishonesty include, but are not limited to the following:

1. **Cheating**

   Cheating involves the possession, communication or use of information, materials, notes, study aids or other devices not authorized by the instructor in an academic exercise or communication with another person during such an exercise for the purpose of obtaining or providing unauthorized information or materials.

2. **Fabrication and Falsification**

   Fabrication involves inventing or counterfeiting information, i.e., creating results not obtained in a study or laboratory experiment. Falsification, on the other hand, involves the deliberate alteration or changing of results to suit one’s needs in an experiment or other academic or creative exercises.

3. **Multiple Submissions**

   This is the submission of academic work for which academic credit has already been earned, when such submission is made without instructor authorization.

4. **Misuse of Academic Materials**

   The misuse of academic materials includes but is not limited to the following: stealing or destroying library or reference materials, computer programs, another student’s notes or materials or illegitimate possession of examination materials, forgery, and falsification of university documents.

5. **Plagiarism**

   Plagiarism is the use of another person’s distinctive ideas or words without acknowledgment. The incorporation of another person’s work into one’s own requires appropriate identification, regardless of the means of appropriation.

6. **Complicity in Academic Dishonesty**

   Complicity involves knowingly allowing or contributing to another’s academic misconduct.

**College of Engineering, Design and Computing**

Students are expected to conduct themselves in accordance with the highest standards of honesty and integrity. Cheating, plagiarism, illegitimate possession and disposition of examinations, alteration, forgery or falsification of official records and similar acts or attempts to
engage in such acts are grounds for suspension or expulsion from the university.

In particular, students are advised that plagiarism consists of any act involving the offering of the work of someone else as the student's own.

The college has a Student Honor Code that all students are required to sign when they meet with their academic advisor. The code outlines the college's expectations of its students and faculty in establishing and maintaining the highest standards in academic work and is available on the college website (http://engineering.ucdenver.edu) under Student Services > Policies and Forms.

The college also has a committee on discipline that hears cases of alleged violations of academic ethics and recommends disciplinary action. In a case of proven academic dishonesty/misconduct, the committee may invoke penalties that may include probation, suspension or expulsion. In a case of suspension or expulsion, a distinction may be placed on a student's academic record indicating the action was due to academic dishonesty/misconduct. Students who suspect or observe violations of academic ethics should report them to their instructor, the department chair or the Office of the Dean.

In addition, there is a student Academic Honor Code at CU Denver. The code is published in a brochure available from the Office of Student Life. Information regarding all student grievance procedures may be obtained in that office.