University of Colorado Denver

Department of Computer Science and Engineering

Computer Science Bachelor of Arts Handbook

Rules of the program leading to a Bachelor of Arts in Computer Science

These degree requirements are in effect starting from 2025-2026 Admission.

The CSE department offers a Bachelor of Science in Computer Science, a Bachelor of Science in Cybersecurity, a Bachelor of Arts in Computer Science, a Minor in Computer Science, an undergraduate certificate in Cybersecurity and Secure Computing, and a Masters in Computer Science as well as two doctorate degrees and graduate certificates in Software Engineering and Cybersecurity and Defense. The department also offers a CS Scholars dual BS/MS program for students in the BACS degree.

Refer to this handbook for complete policies, advising and degree requirements for the Bachelors of Arts in Computer Science degree.

The Bachelor of Arts Computer Science

The Bachelor of Arts Computer Science (BACS) is a four-year degree program and is designed as a 2+2 program for transfer students. **Transfer students can complete this degree in a minimum of two years** (4 full semesters) if Calculus I and both CSCI 1410/1411 and CSCI 2312 have been completed and approved for transfer prior to beginning their first semester at CU Denver.

The BACS gives students foundational knowledge in programming languages, algorithms, and software engineering while allowing them to specialize in other areas of study. The goal is to enable students to apply computer science fundamentals to an interdisciplinary area of their choosing. The BA in computer science has reduced CS requirements and is not an ABET accredited degree but empowers students with computing skills to work in their combined fields of interest. Students who desire to work in computer science technical fields or become computer scientists should pursue the bachelor of science degree.

This degree is not an in-depth computer science degree but allows students the opportunity to apply computer science principles to their career aspirations.

Applying to the BACS:

All GPA and math admissions requirements must be met before applying to the BACS program. Admission requirements can be found at https://engineering.ucdenver.edu/undergraduate-programs/admissions.

First-time students (students with fewer than 24 completed college credits) must meet one of the following criteria:

- Minimum 2.6 cumulative high school GPA (with 3 years of high school math with a minimum 2.7 GPA)

Transfer Students

Students must apply directly through the CU Denver Office of Admissions, http://www.ucdenver.edu/admissions . Once accepted, students should start the transfer process for CS and math courses as soon as possible. Please see the section below regarding transfer evaluations.

Students who, at the time of application, have completed 24 or more credits at regionally accredited postsecondary institutions will be evaluated using transfer admission criteria. This includes students currently enrolled in CU Denver who wish to change majors.

- 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
  **Includes completion of a two-course stretch college algebra sequence (MATH 1108. & MATH 1109)*

Current CU Denver students (outside of CEDC)

Students who would like to transfer from another school or college at CU Denver will need to complete an IUT form. The IUT form should be submitted to the Computer Science and Engineering (CSE) Department in the Lawrence Street Center, Ste 800.

Students must apply for admission **prior to completing 45 credits** from beginning CSCI courses. The IUT form must be completed prior to registering for 3000-level CSCI courses.

Current CEDC pre-engineering students

Pre-engineering students must apply for admission to a major using an IUT form **prior to completing 45 credits** from the time of admittance into pre-engineering.

If a student has retaken Calc I and/or consistently retaken any 1000-2000 level courses more than twice and is unable to make adequate progress toward the admission requirements will be moved to CLAS undeclared and referred to the CU&E center for major exploration.

Current CEDC students in a BS major

Students currently admitted to the College of Engineering, Design and Computing in a bachelor of science major who would like to change majors to the bachelor of arts in computer science need to meet with CSE faculty in the area of their chosen career.

Students will need to submit a CSE Change of Major form and complete an IUT form. Students transferring from the BSCS program must request their change of major before starting Senior Design I.

The change of major request must be completed (including career advising and the CSE transfer request and IUT forms) before the deadlines on the IUT form (Fall semester August 1st, Spring semester December 1st, Summer semester May 1st.)

Advising

Staff Advisors provide academic assistance, promote student success and help the student progress towards educational and career goals. Students should meet with their advisor on a regular basis and come prepared to appointments, ask questions, and take responsibility for actions and decisions that affect academic progress. *Students must familiarize themselves with the program requirements. They are responsible for completing all requirements towards graduation in their respective degree program.*

Prior to the last semester before graduation students must meet with their advisor and complete a graduation plan. This identifies the courses that need to be satisfactorily completed during the final semester of your program. Students must apply for graduation on their portal before census date the semester of graduation.

It is recommended that students get to know CSE faculty well enough that they can serve as references in the future for employment or when applying for an internship or graduate school.

Students can schedule an appointment with their advisor in Navigate or by contacting the CSE department at 303-315-1408 or computerscience@ucdenver.edu.

Transfer Credit Evaluations

Students may request transfer evaluations for courses completed prior to beginning their first semester at CU Denver. Transfer evaluations are only completed for academic coursework. Transfer evaluations will not be completed until an official transcript has been received by CU Denver and the final grade has been posted for the course.

- All transfer credits for math, science, and general education will be evaluated by the Admissions office. If a course is not accepted for equivalency, students may request an evaluation using the CLAS transfer request form.
- Students requesting transfer evaluation for computer science coursework must complete a CSE transfer request form. A syllabus is required for all computer science transfer requests.

- Transfer credit from international universities will only be accepted if the school is ABET accredited. All international coursework will also need credit evaluation through International Admissions.
- The CSE department will not review courses, or approve transfer credit, for coursework students have not completed.
- All transfer evaluation decisions are final.

CU Denver students taking courses elsewhere

Students must take all their computer science coursework (CSCI prefixes) at CU Denver once admitted to the College of Engineering, Design and Computing.

Students may take courses from outside of CU Denver to meet core course requirements, math, and/or science requirements. Students should meet with their CSE advisor to ensure the course(s) selected will transfer over prior to registration.

Petitions

All CEDC and CS program requirements and policies are strictly enforced. Any deviations from policies or curriculum must be approved via a CSE student petition. Students should meet with their academic advisor to discuss the petition process and if there is reasonable justification for an exceptional condition for the request. Petitions must be submitted to the CSE department office. Please note that it takes about two weeks to process any petition and may take longer at the beginning or end of the semester.

No petitions are accepted for waiving courses or pre-requisite requirements. Petitions are also not accepted for course registration requests or changes after census date.

Laptop Requirement

Undergraduate students in the CSE Department are required to have a personal laptop before starting 3000 level classes. Laptop requirements can be found here.

Incomplete Grade

An Incomplete grade may be requested when there is a small amount of work left in a course at the end of the semester due to a situation/event beyond the student's control. Students should contact their instructor to request an Incomplete. If the instructor agrees, the student and instructor will work together to draft an Incomplete Agreement.

The Incomplete Agreement should include justification for the Incomplete, current grade in the course, what work is left to complete and expectations for completion, and timeframe for completion. The Incomplete Agreement will then be reviewed by the department. If approved, the agreement is final and the work must be completed according to the agreement expectations and timeframe.

Per the university Registrar's Office, any Incomplete that is not awarded a grade after one calendar year will automatically revert to an F.

Required cumulative GPA

To remain in good standing with the College of Engineering, Design and Computing, you must maintain at least 2.0 cumulative GPA for all courses and a minimum 2.0 GPA for all courses that are counted as part of the study program.

University and College requirements

These rules of the undergraduate program of the CSE department are complementary to the policies, regulations and requirements of the University of Colorado Denver and the College of Engineering, Design and Computing. The relevant information about these rules and policies is published annually in the University of Colorado Denver catalog, which is available on the CU Denver website www.ucdenver.edu.

Student Code of Conduct

CU Denver strives to make the campus community a place of study, work, and residence where people are treated, and treat one another, with respect and civility.

As members of the CU Denver community, students are expected to uphold university standards that assist in promoting a safe and welcoming community. Every CU Denver student assumes responsibility for knowing and understanding the various local, state, federal, and university laws, policies, and regulations as well as the Student Code of Conduct. The Student Code of Conduct outlines student rights & responsibilities, behavioral expectations and the university conduct process.

Curriculum

All admitted students must follow the curriculum that is in place at the time they are admitted into the computer science program.

Prerequisite requirements are strictly enforced for all computer science (CSCI) courses.
Students are responsible for consulting advisors & the class schedule in the student portal for prerequisite information.

Students will complete a total of 120 credit hours including:

- 24 credit hours of core curriculum coursework
- 43 credit hours of computer science coursework
- 7 credit hours minimum of mathematics coursework
- 8 credit hours minimum of natural or physical science coursework
- 38 credit hours of free electives – the specialization area

CU Denver Core Curriculum

The undergraduate core curriculum consists of 24 credit hours including social sciences, humanities, arts, international perspectives, cultural diversity, behavioral sciences, and intellectual competencies (English 1020 and English 2030). Students should refer to the current CU Denver catalog for available courses and their prerequisite requirements.

CS Core Courses

Students must complete 22 credit hours of computer science core courses consisting of

the following:

- CSCI 1410 Fundamental of Computing
- CSCI 1411 Fundamentals of Computing Lab
- CSCI 2312 Object Oriented Programming
- CSCI 2421 Data Structures & Program Design
- CSCI 2511 Discrete Structures
- CSCI 3287 Database Systems
- CSCI 3412 Algorithms
- CSCI 3508 Introduction to Software Engineering

CS Technical Electives

Students must complete 21 credit hours (7 courses) chosen from any CSCI 3000 or 4000-level courses that are not part of the required BACS computer science core curriculum.

Students may enroll for up to a total of two graduate courses as CS Technical Electives, from a list of approved courses, with a GPA of 3.3 or higher and instructor approval. Students may apply 3 credits of CSCI 4929 Internship as a CS Technical Elective after the successful completion of CSCI 3412.

Most CS Technical Electives require CSCI 3412 Algorithms as a pre-requisite.
Students should plan to complete the majority of their CS Technical electives after completion of CSCI 3412.

Mathematics

Students must complete a minimum of 7 credit hours of mathematic courses including MATH 1401 Calculus I and an additional 2000 level math course.

Natural & Physical Sciences

Students must complete a minimum of 8 credit hours of natural & physical science courses with labs. At least 4 credit hours must come from the CU Denver Core Curriculum Natural & Physical Science Courses w/Labs intended for Science Majors.

Free Electives

Students must take 38 credit hours (12-13 courses) of free electives from any program. Students are encouraged to use the BACS free electives toward a minor or a second major in their area of concentration. Students would need to meet with an advisor within their concentration area to make sure they are satisfying the required curriculum.

Sample Academic Plan consistent with the prerequisite requirements

Year One	Semester 1	CRS
	CSCI 1410 FUNDAMENTALS OF COMPUTING	3
	CSCI 1411 FUNDAMENTALS OF COMPUTING LAB	1
	ENGL 1020 CORE COMPOSITION I	3
	FREE ELECTIVE (ENGR 1200 RECOMMENDED)	3
	CORE CURRICULUM ELECTIVE	3

Semester 2	CRS
CSCI 2312 OBJECT ORIENTED PROGRAMMING	3
MATH 1401 CALCULUS I	4
ENGL 2030 CORE COMPOSITION II	3
FREE ELECTIVE	3
FREE ELECTIVE	3

Year Two	Semester 3	CRS
	CSCI 2511 DISCRETE STRUCTURES	3
	CSCI 2421 DATA STRUCTURES	3
	SCIENCE CHOICE	3
	SCIENCE CHOICE LAB	1
	FREE ELECTIVE	3
	CORE CURRICULUM ELECTIVE	3

Semester 4	CRS
CSCI 3412 ALGORITHMS	3
MATH Elective (2000+ level math course)	3
SCIENCE CHOICE	3
SCIENCE CHOICE LAB	3
FREE ELECTIVE	1
FREE ELECTIVE	3

Year Three	Semester 5	CRS
	CSCI 3508 SOFTWARE ENGINEERING	3
	CS ELECTIVE	3
	CS ELECTIVE	3
	FREE ELECTIVE	3
	CORE CURRICULUM ELECTIVE	3

Semester 6	CRS
CSCI 3287 DATABASE SYSTEMS	3
CS ELECTIVE	3
FREE ELECTIVE	3
FREE ELECTIVE	3
CORE CURRICULUM ELECTIVE	3

Year Four	Semester 7	CRS
	CS ELECTIVE	3
	CS ELECTIVE	3
	FREE ELECTIVE	3
	FREE ELECTIVE	3
	CORE CURRICULUM ELECTIVE	3

Semester 8	CRS
CS ELECTIVE	3
CS ELECTIVE	3
FREE ELECTIVE	3
FREE ELECTIVE	2
CORE CURRICULUM ELECTIVE	3

Sample CSCI Coursework Academic Plan for transfer students consistent with prerequisite requirements

The two year transfer student CSCI coursework academic plan is contingent on approved transfer credit for Calculus I, CSCI 1410, CSCI 1411 and CSCI 2312. This plan **only** shows CSCI courses; all other degree requirements must be included in an individual plan of study.

Year One	Semester 1	CRS
	CSCI 2511 DISCRETE STRUCTURES	3
	CSCI 2421 DATA STRUCTURES	3

Semester 2	CRS
CSCI 3412 ALGORITHMS	3
CSCI 3287 DATABASE SYSTEMS	3

Year Two	Semester 3	CRS
	CSCI 3508 SOFTWARE ENGINEERING	3
	CS ELECTIVE	3
	CS ELECTIVE	3
	CS ELECTIVE	3

Semester 4	CRS
CS ELECTIVE	3
CS ELECTIVE	3
CS ELECTIVE	3
CS ELECTIVE	3

Dual BA / MS Program

Current full-time Bachelor of Arts in Computer Science Students wishing to continue to a Master of Science in Computer Science have an additional option to combine both efforts.

The Computer Science Dual BA/MS program allows the student to take up to four 5000-level MS courses counting as both CS Tech electives for their BACS and towards their MSCS degree. All graduate program rules apply to graduate courses, including a requirement for a B- or better to count toward the MS degree. Students must meet with a CS Graduate advisor within a semester of acceptance into the Dual BA/MS Program.

Admission

Students must apply for their Dual BA/MS Program before their last year undergraduate coursework to receive dual credit for 5000 level courses. Transfer students into the BA in Computer Science may apply during their last semester if completing 45 credits or less at CU Denver.

Students must complete a Computer Science Dual BA/MS Program Application. Students should meet with their advisor to discuss possible courses and submit the application..

If accepted, students remain in an Undergraduate status until receiving their BA degree, then move into a Graduate status with an intent of completing the MS in Computer Science within a year.

In order to apply for the Dual BA/MS Program, the student must have:

- Completed at least 60 credits toward the BACS degree.
- Completed the following courses: MATH 2411: Calculus II, CSCI 3412: Algorithms, and CSCI 3287: Database Systems.
- Commit to completing the following courses while in undergraduate status: CSCI 3453: Operating Systems Concepts, CSCI 4591: Computer Architecture and MATH 3195: Linear Algebra and Differential Equations.
- Have a minimum cumulative GPA of 3.3 or a 3.5 GPA in CS major coursework.

The Computer Science Graduate committee will review the application, and notify the students of their decision.

Pathway for the BA/MS Dual degree program

- Complete the following course as MATH 2000 level elective: MATH 2411
- Complete the following courses as free electives: CSCI 1510, CSCI 2525 and MATH 3195
- Complete the following courses as CS Technical electives: CSCI 3453 and CSCI 4591