University of Colorado Denver

Department of Computer Science and Engineering

Cybersecurity Bachelor of Science Handbook
Rules of the program leading to a Bachelor of Science in Cybersecurity

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 Cyber Security](), 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".]()

Refer to this handbook for complete advising and degree requirements for the Bachelor of Science in Cybersecurity degree.

The Bachelor of Science Cybersecurity

The Bachelor of Science in Cybersecurity is a four-year degree program. The BSCY degree gives students the knowledge and skills required to combat threats and develop secure systems at every level of operation. Students will develop fundamental and advanced computing systems knowledge and skills in the area of computer sciences, with a concentration on network and infrastructure security, system security, software security, organizational security, risk assessment and information assurance, privacy, and societal security, including law, policy, and ethics. In the cyber security degree students gain skills and experience which are immediately useful in today's workforce where cybersecurity–cyber offense and defense–is a growing concern and necessity in both the public and private sector.

Applying to the BSCY program

All GPA and math admissions requirements must be met before applying to the BSCY 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 UCD 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 BA major
Students currently admitted to the College of Engineering, Design and Computing in the bachelor of arts in computer science degree who would like to change majors to the BSCY degree need to ensure they meet admissions criteria and meet with their advisor to discuss the additional requirements.

Students will need to submit a CSE Change of Major form and complete an IUT form. The change of major request must be completed before the deadlines on the IUT form (Fall semester August 1st, Spring semester December 1st, Summer semester May 1st.)

Current CEDC students in a BS major

Students currently admitted to the College of Engineering, Design and Computing in the bachelor of science in computer science degree who would like to change majors to the BSCY degree need to ensure they meet admissions criteria and meet with their advisor to discuss the additional requirements.

Students will need to submit a CSE Change of Major form and complete an IUT form. The change of major request must be completed 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 or cybersecurity coursework must complete a CSE transfer request form. A syllabus is required for all computer science and cybersecurity 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 BSCY program requirements and policies are strictly enforced. Any deviations from policies or curriculum must be approved via a CSE department 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.

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.

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.

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.

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 for B.S. in Cybersecurity

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) and cybersecurity (CSCY) courses. Students are responsible for consulting advisors & the class schedule in the student portal for prerequisite information.

3000 and 4000 level cybersecurity courses are typically offered only once per year or once every other year. Students should follow the BSCY Curriculum Flowchart to plan 3000 and 4000 level courses.

Students will complete a total of 120 credit hours including:
- 24 credit hours of core curriculum coursework
- 31 credit hours of computer science coursework
- 47 credit hours of cybersecurity coursework
- 7 credit hours of mathematics coursework
- 8 credit hours minimum of natural or physical science coursework
- 3 credits of engineering design coursework

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 31 credit hours of computer science core courses consisting of the following:

- CSCI 1410 Fundamental of Computing
- CSCI 1411 Fundamentals of Computing Lab
- CSCI 1510 Logic Design
- CSCI 2312 Object Oriented Programming
- CSCI 2421 Data Structures & Program Design
- CSCI 2511 Discrete Structures
- CSCI 2525 Assembly Language & Computer Organization
- CSCI 3287 Database Systems
- CSCI 3412 Algorithms
- CSCI 3453 Operating Systems Concepts
- CSCI 3761 Intro to Networks

Cybersecurity Core Courses

Students must complete 32 credit hours of cybersecurity core courses consisting of the following:

- CSCY 2930 Practical System Administration
- CSCY 3740 Computer Security
- CSCY 3765 Secure Network & Systems Programming
- CSCY 4407 Security & Cryptography
- CSCY 4741 Principles of Cybersecurity
- CSCY 4742 Cybersecurity Programming & Analysis
- CSCY 4743 Cyber & Infrastructure Defense
- CSCY 4738 Senior Design Project I
- CSCY 4739 Senior Design Project II
- CSCY 4772 Mobile & IoT Security
- CSCY 4950 Cybersecurity Risk Analysis & Management

Cybersecurity Technical Electives

Students must complete 15 credit hours (5 courses) chosen from any CSCY 3000 or 4000-level courses that are not part of the required BSCY curriculum. Students may also take MATH 3195, CSCI 3415, 4034, 4591, or 4773 to fulfill up to 6 technical elective credits.

Mathematics

Students must complete a minimum of 7 credit hours of mathematic courses

- MATH 1401 Calculus I
- MATH 2830 Introductory Statistics

Natural & Physical Sciences

Students must complete a minimum of 8 credit hours of natural & physical science courses with labs (for science majors) with ENGR 1300 Chemistry for Engineers as a choice

Engineering Design

Students must complete ENGR 1200 Fundamentals of Engineering Design Innovation

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
	MATH 1401 CALCULUS I	4
	ENGR 1200 FUND OF ENGINEERING DESIGN INNOVATION	3
	ENGL 1020 CORE COMPOSITION I	3

Year One	Semester 2	CRS
	CSCI 1510 LOGIC DESIGN	3
	CSCI 2312 OBJECT ORIENTED PROGRAMMING	3
	CSCI 2511 DISCRETE STRUCTURES	3
	CSCY 2930 PRACTICAL SYSTEMS ADMINISTRATION	2
	ENGL 2030 CORE COMPOSITION II	3

Year Two	Semester 3	CRS
	CSCI 2421 DATA STRUCTURES & PROGRAM DESIGN	3
	CSCI 2525 ASSEMBLY LANGUAGE	3
	MATH 2830 INTRODUCTORY STATISTICS	3
	CORE CURRICULUM CHOICE	3
	SCIENCE CHOICE	3-4
	SCIENCE CHOICE LAB	1

Year Two	Semester 4	CRS
	CSCI 3287 DATABASE SYSTEMS	3
	CSCI 3761 INTRODUCTION TO COMPUTER NETWORKS	3
	CSCY 3740 COMPUTER SECURITY	3
	CORE CURRICULUM CHOICE	3
	SCIENCE CHOICE	3-4
	SCIENCE CHOICE LAB	1

Year Three	Semester 5	CRS
	CSCI 3412 ALGORITHMS	3
	CSCY 3765 SECURE NETWORK & SYSTEMS PROGRAMMING	3
	CSCY 4741 PRINCIPLES OF CYBERSECURITY	3
	CYBERSECURITY TECHNICAL ELECTIVE	3
	CORE CURRICULUM CHOICE	3

Year Three	Semester 6	CRS
	CSCI 3453 OPERATING SYSTEMS	3
	CSCY 4742 CYBERSECURITY PROG. & ANALYSIS	3
	CSCY 4743 CYBER & INFRASTRUCTURE DEFENSE	3
	CYBERSECURITY TECHNICAL ELECTIVE	3
	CORE CURRICULUM CHOICE	3

Year Four	Semester 7	CRS
	CSCY 4738 SENIOR DESIGN I (Security focused projects)	3
	CSCY 4772 MOBILE & IOT SECURITY	3
	CYBERSECURITY TECHNICAL ELECTIVE	3
	CYBERSECURITY TECHNICAL ELECTIVE	3
	CORE CURRICULUM CHOICE	3

Year Four	Semester 8	CRS
	CSCY 4407 SECURITY & CRYPTOGRAPHY	3
	CSCY 4739 SENIOR DESIGN II	3
	CSCY 4950 CYBERSECURITY RISK ANALYSIS & MANAGEMENT	3
	CORE CURRICULUM CHOICE	3
	CYBERSECURITY TECHNICAL ELECTIVE	3