Computer Science
Bachelor of Arts (B.A.) – Catalog Year 2023-2024

PROGRAM OVERVIEW

Computer Science is rapidly changing the nature of today's work force. People in today's world need computational thinking in every field. The Bachelor of Arts in computer science at CU Denver is a flexible degree program. It is designed with a modular approach that allows degree customization by combining computer science fundamentals with students other academic or career interests.

Graduates of the undergraduate BACS program will be able to:

- Apply algorithmic reasoning to a variety of computational problems
- Implement software systems that meet specific design requirements
- Use current tools or computing techniques to implement and evaluate programs or computer-based solutions
- Apply computer science techniques and tools to solve problems in a chosen application area

ACADEMIC ADVISING

Advising in the College of Engineering, Design and Computing (CEDC) depends on your student standing—undergraduate students either are pre-engineering or are admitted to the college, depending on degree progress.

Students admitted to the College of Engineering, Design and Computing (CEDC) who have declared a major are required to meet with an advisor in their specific department and should contact that department to schedule an appointment.

Computer Science & Engineering
computerscience@ucdenver.edu
Visit the department website here
Lawrence Street Center, 8th Floor
303-315-1408

GENERAL GRADUATION REQUIREMENTS & POLICIES

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

1. Complete a minimum of 120 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 CEDC hours as a declared CEDC student 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 their assigned advisor in their department to confirm major requirements. Students completing the Computer Science B.A. Degree are required to complete the following minimum program requirements:

1. Complete 24 semester hours of **CU Denver Core Curriculum coursework**.
2. Complete a minimum of 22 semester hours of **required computer science core courses**
3. Complete a minimum of 21 semester hours of **computer science technical electives**
4. Complete a minimum of 38 semester hours of **free electives in an area of concentration**
5. Complete 15 semester hours of **mathematics and science**

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	*CU Denver Core*
Required Computer Science Core Courses	22	
CSCI 1410 Fundamentals of Computing	3	*Co-Requisite: CSC 1411*
CSCI 1411 Fundamentals of Computing Lab	1	*Co-Requisite: CSC 1410*
CSCI 2312 Object Oriented Programming	3	*****Prerequisite: CSCI 1410 & 1411*
CSCI 2421 Data Structures & Program Design	3	*****Prerequisite: CSCI 2312*
CSCI 2511 Discrete Structures	3	*****Prerequisite: MATH 1401*
CSCI 3287 Database Systems	3	*****Prerequisite: ENGL 1020, CSCI 2421*
CSCI 3412 Algorithms	3	*****Prerequisite: CSCI 2421 & 2511*
CSCI 3508 Introduction to Software Engineering	3	*****Prerequisite: CSCI 3412*
CS Technical Electives	21	*Any CSCI 3000-level and above courses that have not been applied. See handbook for additional information.*
Required Mathematics	7	
MATH 1401 Calculus I	4	*****Prerequisite: (MATH 1120 or 1130) and placement exam*
Any additional 2000+ level Math Class	3	*Includes CS Department approved CSCI Courses*
Required Science	8	
2 courses with labs of natural & physical sciences with a minimum of 4 credits from the CU Core natural and physical science courses w/labs intended for Science majors.	8	*See handbook for additional information*
Free Electives	38	*Student's area of concentration.*
Total Program Hours:	120	

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, IB, CLEP, 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 Please note CS courses that are not part of the BACS core can be counted toward satisfying free electives. This can help with taking systems courses to prepare for the required background for some advanced CS/breadth areas of interest.

Students deviating from this plan must fulfill course prerequisites and must meet with the faculty advisor in their department to confirm degree 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	3
	ENGL 2030 CORE COMPOSITION II	4
	FREE ELECTIVE	3
	FREE ELECTIVE	3

Year Two	Semester 3	CRS
	CSCI 2421 DATA STRUCTURES & PROGRAM DESIGN	3
	CSCI 2511 DISCRETE 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
	CS ELECTIVE	3
	SCIENCE CHOICE	3
	SCIENCE CHOICE LAB	1
	FREE ELECTIVE	3

Year Three	Semester 5	CRS
	CSCI 3508 INTRODUCTION TO SOFTWARE ENGINEERING	3
	CS ELECTIVE	3
	FREE 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