METROPOLITAN STATE UNIVERSITY OF DENVER

Department of Computer Sciences

Major in Computer Science, B.S.

Effective Fall 2023

Purpose of the Major

The Department offers coursework leading to the Bachelor of Science (B.S.) degree in Computer Science. The Computer Science major provides students with broad-based preparation in Computer Science with the appropriate supporting background in mathematics, science, communication, and ethics. **A grade of "C-" or better is required in all courses required for the major (CS, Math, Science, and Ancillary).** The program is accredited by the Computing Accreditation Commission of ABET, **http://abet.org** .

Required Computer Science Courses: 62 credits

	Semester Hours
CS 1030 Computer Science Principles	4
CS 1050 Computer Science 1	4
CS 1400 Computer Organization 1	4
CS 2050 Computer Science 2	4
CS 2240 Discrete Structures for Computer Science	4
CS 2400 Computer Organization 2	4
CS 3210 Principles of Programming Languages…	4
CS 3240 Introduction to Theory of Computation	2
CS 3250 Software Development Methods & Tools	4
CS 3600 Operating Systems	4
CS 3700 Networking and Distributed Computing	4
CS 4050 Algorithms and Algorithm Analysis	4
CS 4360[1] Senior Experience in Computer Science	4
CS Upper Division Electives	12

[1]University-required Senior Experience course

Required Mathematics: 12 credits

	Semester Hours
MTH 1410 Calculus I	4
MTH 3130 Applied Methods in Linear Algebra	4
MTH 3210 Probability and Statistics	4

Required Ancillary Courses: 9 credits

	Semester Hours
COMM 1010 Presentational Speaking, or,	
COMM 1100 Fundamentals of Oral Communication	3
And,	
JMP 2610 Introduction to Technical Writing	3
PHI 3370 Computers, Ethics, and Society	3

Required Science Courses: 6 credits[2]

Must include one of the following groups of courses: Additionally, ENV 1200 (3 credits) may be chosen.

BIO 1080 General Biology I	3
BIO 1090 General Biology Laboratory I	1
OR	
BIO 1081 General Biology 2	3
BIO 1091 General Biology Laboratory 2	1
OR	
CHE 1800 General Chemistry I	4
CHE 1801 General Chemistry I Laboratory	1
OR	
CHE 1810 General Chemistry 2	4
CHE 1811 General Chemistry 2 Laboratory	1
OR	
GEL 1010 Physical Geology	4
OR	
MTR 1400 Weather and Climate…	3
MTR 2020 Weather and Climate Lab for Sciences	1
OR	
PHY 2311 General Physics I	4
PHY 2321 General Physics I Laboratory	1
OR	
PHY 2331 General Physics 2	4
PHY 2341 General Physics 2 Laboratory	1

[2]More often, this total will be 7 credits or more

General Studies & Additional Course Requirements

Students must complete the required MSU Denver General Studies course requirements (33 credits min.). Some of the Science, Mathematics, or Ancillary courses required for the Computer Science major may partially or fully satisfy specific General Studies requirements.

The Ethnic Studies & Social Justice (ESSJ) graduation requirement of 3 credit hours must also be satisfied. Some courses that satisfy the Multicultural requirement also satisfy a General Studies requirement.

Total Credit Hours for the Computer Science B.S. Degree 120

If you want additional information on this program or other programs offered by the **Department of Computer Sciences** visit our website at: https://msudenver.edu/cs/ or call the office at: **(303) 615-0399**

Purposes of the Computer Science Major

The Department of Computer Sciences, in the College of Health and Applied Sciences, offers a *Bachelor of Science in Computer Science*.

A Computer Science major provides students with broad-based preparation in the Computer Sciences and appropriate supporting background in mathematics, science, communication, and social awareness.

Graduates in Computer Science (CS) are positioned for employmentin a variety of jobs both in the computing field and in the application of computing to other fields. The CS major also prepares students for continued study of Computer Science at the graduate level.

Specifically, the MSU Denver Computer Sciences program enables its graduates to become:

- Professionals capable of applying Computer Science principles and practices
- Graduate students in Computer Science and related fields
- Life-long learners capable of self-study, continuing education, and ongoing professional development
- Ethical practitioners in Computer Science and related fields
- Innovators able to respond to technological change and intellectual challenge

** A minor in Computer Science is available **

Computer Sciences Advising and Declaring a Major in Computer Science

For Computer Sciences advising, schedule an appointment with a CS advisor or faculty member.

Additional information about the Department of Computer Sciences is available at the department's website at https://msudenver.edu/cs/ .

Computer Science Advisors & Faculty

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Prerequisite Chart for Required Computer Science

CS 1030 Computer Science Principles	No Prerequisites
CS 1050 Computer Science 1	CS 1030 or Readiness for College Algebra
CS 1400 Computer Organization 1	Readiness for College Algebra
CS 2050 Computer Science 2	CS 1050 and College Algebra
CS 2240 Discrete Structures for Computer Science	CS 2050 and either (MTH 1400 or equivalent) or (MTH 1120 and (MTH 1110 or equivalent))
CS 2400 Computer Organization 2	CS 1050, CS 1400, College Algebra
CS 3210 Principles of Programming Language	CS 2050, CS 2400, CS 3240, CS 3250, and CS 2240
CS 3240 Intro to Theory of Computation	CS 2050 and CS 2240
CS 3250 Software Development Methods & Tools	CS 2050, ENG 1020, and CAS 1010
CS 3600 Operating Systems	CS 2050, CS 2400, and CS 3250
CS 3700 Networking and Distributed Computing	CS 1400 and CS 2050
CS 4050 Algorithms and Algorithm Analysts	CS 3240, CS 3250, and 4 additional credits of upper division CS courses
CS 4360 Senior Experience in Computer Science	Senior Standing, CS 3250, COMM 1010/1100, JMP 2610, PHI 3370, and 12 additional upper division CS credits

To see which CS Faculty Member is assigned to you, please check the Faculty Advising List 2022-2023 at: https://www.msudenver.edu/cs/academic-student-support/

Prerequisite Flowchart for Required CS Courses