

Department of Computer Sciences
Major in Computer Science, B.S.
Effective Fall 2021

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 Mathematics background. **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: 58 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 2400 Computer Organization 2	4
CS 2240 Discrete Structures for Computer Science.....	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 4050 Algorithms and Algorithm Analysis	4
CS 4260 ¹ Software Engineering Practices OR	
CS 4360 ¹ Technical Software Project.....	4
CS Upper Division Electives	12

¹University-required Senior Experience course

Required Mathematics: 12 credits

	Semester Hours
MTH 1410 Calculus I.....	4
MTH 3130 ² Applied Methods in Linear Algebra	4
MTH 3210 Probability and Statistics	4

²MTH 3140 may be substituted for MTH 3130. Only one of MTH 2140, MTH 3130 or MTH 3140 can be counted.

Required Ancillary Courses: 9 credits

	Semester Hours
COMM 1010 Presentational Speaking.....	3
JMP 2610 Introduction to Technical Writing	3
PHI 3370 Computers, Ethics, and Society.....	3

Required Science Courses: 6 credits³

At least two of the following courses:

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	
ENV 1200 Intro to Environmental Science	3
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

³More 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. Some of the Science, Mathematics, or Ancillary courses required for the Computer Science major may partially or fully satisfy specific General Studies requirements.

The Multicultural 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

Purposes of the Computer Science Major

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

A Computer Science major provides students with broad-based preparation in Computer Sciences and appropriate supporting Mathematics background.

Graduates in Computer Science (CS) are positioned for employment in a variety of jobs in the computing field. The CS major also prepares students for continued study of Computer Sciences at the graduate level.

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

- Professionals capable of applying Computer Science and software engineering 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, software engineering 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 Computer Sciences professional advisor or faculty advisor. A Computer Sciences faculty advisor can also assist with declaring your Computer Science major and/or mathematics minor.

Additional information about the Department of Computer Sciences is available at the department's website at <https://msudenverstg.wpengine.com/computer-sciences/>.

Computer Science Professional & Faculty Advisors

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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 2400 Computer Organization 2	CS 1050, CS 1400, College Algebra
CS 3250 Software Development Methods & Tools	CS 2050, ENG 1020, CAS 1010
CS 3600 Operating Systems	CS 2050, CS 2400, CS 3250
CS 3240 Intro to Theory of Computation	CS 2050, MTH 3170
CS 3210 Principles of Programming Language	CS 2050, CS 2400, CS 3240, CS 3250, MTH 3170
CS 4050 Algorithms and Algorithm Analysts	CS 3240, CS 3250, 4 additional credits of upper division CS courses
CS 4360 Technical Software Project	Senior Standing, JMP 2610, PHI 3370, CAS 1010, CS 3210, CS 3600, 8 additional upper division CS credits

Prerequisite Flow Chart

