COMPUTER SCIENCE B.S. - ALGORITHM DESIGN

General Degree Requirements

To earn a baccalaureate degree, all students must complete successfully, in addition to any other requirements, the University of Montana General Education Requirements. Please refer to the General Education Requirements page (https://catalog.umt.edu/academics/general-education-requirements/) for more information.

Additional requirements for graduation can be found on the Degree/Certificate Requirements for Graduation page (https://catalog.umt.edu/academics/graduation-requirements/).

Unless otherwise noted in individual program requirements, a minimum grade point average of 2.00 in all work attempted at the University of Montana-Missoula is required for graduation. Please see the Academic Policies and Procedures page (https://catalog.umt.edu/academics/policies-procedures/) for information on how your GPA is calculated.

Courses taken to satisfy the requirements of a major, minor, or certificate program must be completed with a grade of C- or better unless a higher grade is noted in the program requirements.

Bachelor of Science - Computer Science; Algorithm Design Concentration

Course Requirements

Code	Title	Hours
Computer Science Core Courses		
Complete all of the following courses:		
CSCI 150	Introduction to Computer Science	3
CSCI 151	Interdisciplinary Computer Science I	3
CSCI 152	Interdisciplinary Computer Science II	3
CSCI 232	Intermediate Data Structures and Algorithms	4
CSCI 258	Web Application Development	3
CSCI 315E	Computers, Ethics, and Society (fulfills the Advanced Writing Requirement)	3
CSCI 332	Advanced Data Structures and Algorithms	3
CSCI 340	Database Design	3
CSCI 406	Careers in Computer Science	1
M 171	Calculus I	4
M 225	Introduction to Discrete Mathematics	3
Communication Requirement		
Complete the following course:		3
COMX 111A	Introduction to Public Speaking	
Algorithm Design Concentration Core Courses		
Complete all of the following courses:		
M 172	Calculus II	4
M 221	Introduction to Linear Algebra	4
STAT 342	Probability and Simulation	3
CSCI 361	Computer Architecture	3
CSCI 432	Advanced Algorithm Topics	3
CSCI 460	Operating Systems	3
Upper-Division Computer Science Electives		
Complete 18 credits of upper-division Computer Science (CSCI) courses and as many as 3 credits of approved upper division math elective. [1]		18
Approved upper-division math elective - May be taken in place of one upper-division Computer Science elective:		
M 361	Discrete Optimization	
M 362	Linear Optimization	
M 414	Deterministic Models	
M 440	Numerical Analysis	
M 485	Graph Theory	
STAT 421	Probability Theory	
Total Hours		**74**

[1] A maximum of 3 credits from each of the following groups may count toward Computer Science electives. Total credits across all groups may not exceed 6.
- Research (CSCI 390 or CSCI 490)
- Independent study (CSCI 392 or CSCI 492)
- Learning Assistant (CSCI 394)
- Internship (CSCI 398 or CSCI 498)

Four Year Plan

Course	Title	Hours
Freshman		
Autumn		
CSCI 150	Introduction to Computer Science	3
CSCI 106	Careers in Computer Science	1
COMX 111A	Introduction to Public Speaking	3
Gen Ed Elective		6
	Hours	**13**
Spring		
CSCI 151	Interdisciplinary Computer Science I	3
WRIT 101	College Writing I	4
M 121 or M 122 or M 151	College Algebra [1] or College Trigonometry or Precalculus	3-4
Gen Ed Elective		6
	Hours	**16-17**
Sophomore		
Autumn		
CSCI 152	Interdisciplinary Computer Science II	3
M 171	Calculus I	4
CSCI 258	Web Application Development	3
Lab Science seq I		4-5
	Hours	**14-15**
Spring		
CSCI 232	Intermediate Data Structures and Algorithms	4
M 225	Introduction to Discrete Mathematics (coreq for CSCI 232)	3
CSCI 361	Computer Architecture	3
Lab Science seq II		4-5
Gen Ed Elective		3
	Hours	**17-18**
Junior		
Autumn		
CSCI 332	Advanced Data Structures and Algorithms	3

Intermediate Writing Course		3
CSCI 340	Database Design	3
M 172	Calculus II	4
	Hours	**13**
Spring		
CSCI 315E	Computers, Ethics, and Society	3
CSCI 432	Advanced Algorithm Topics	3
M 221	Introduction to Linear Algebra	4
Science Elective		3-5
Gen Ed Elective		3
	Hours	**16-18**
Senior		
Autumn		
STAT 342	Probability and Simulation	3
Gen Ed Elective		3
CS Core Elective		9
	Hours	**15**
Spring		
Gen Ed Elective		3
CS Core Elective		9
M 361	Discrete Optimization	3
or M 362	or Linear Optimization	
or M 414	or Deterministic Models	
or M 440	or Numerical Analysis	
or M 485	or Graph Theory	
or STAT 421	or Probability Theory	
	Hours	**15**
	Total Hours	**119-124**

Last updated Autumn 2024

[1] Preparatory course - no credit towards degree, must be taken at this time to assure progression through degree

[2] M 162 will not be accepted for this concentration