

MAJOR IN MATHEMATICS, COMPUTATIONAL MATHEMATICS CONCENTRATION

Requirements Effective Fall 2023

A minimum grade of 'C' (2.000) is required in all mathematics, statistics, and computer science courses that are required for graduation.

Freshman

		AUCC	Credits
CO 150	College Composition (GT-CO2)	1A	3
MATH 192	First Year Seminar in Mathematical Sciences		1
Select one group from the following:			5-9
Group A:			
CS 150B	Culture and Coding: Python (GT-AH3)	3B	
CS 162 or 164	CS1–Introduction to Java Programming CS1–Computational Thinking with Java		
Group B:			
CS 152	Python for STEM		
CS 162 or 164	CS1–Introduction to Java Programming CS1–Computational Thinking with Java		
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	
Select one course from the following:			4
MATH 156	Mathematics for Computational Science I (GT-MA1)	1B	
MATH 160	Calculus for Physical Scientists I (GT-MA1)	1B	
Select one course from the following:			4
MATH 161	Calculus for Physical Scientists II (GT-MA1)	1B	
MATH 256	Mathematics for Computational Science II		
1C (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc)		1C	3
Biological and Physical Sciences (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences)		3A	3
Historical Perspectives (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	3
Elective ³			0-4
Total Credits			30

Sophomore

CS 165	CS2–Data Structures		4
Select one course from the following:			2-4
CS 220	Discrete Structures and the Applications		
MATH 235	Introduction to Mathematical Reasoning		
Select one course from the following:			3-4
DSCI 369	Linear Algebra for Data Science		
MATH 369	Linear Algebra I		
Select one course from the following:			3
STAT 303/ECE 303	Introduction to Communications Principles		

STAT 315	Intro to Theory and Practice of Statistics		
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Biological and Physical Sciences (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences)		3A	4
Social and Behavioral Sciences (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)		3C	3
Electives ³			5-8
Total Credits			30
Junior			
Select one course from the following:			3
MATH 360	Mathematics of Information Security	4A	
MATH 366	Introduction to Abstract Algebra	4A	
Select one course from the following:			3
CS 320	Algorithms--Theory and Practice	4B	
MATH 317	Advanced Calculus of One Variable	4B	
Mathematical Sciences Electives ¹			9
Mathematical/Computer Science Electives ²			6
Electives ³			9
Total Credits			30
Senior			
JTC 300	Strategic Writing and Communication (GT-C03)	2	3
Select one Capstone Course:			3
MATH 435	Projects in Applied Mathematics	4C	
MATH 460	Information and Coding Theory	4C	
Mathematical Science Electives ¹			3
Mathematical/Computer Science Electives ²			6
Electives ³			15
Total Credits			30
Program Total Credits:			120

¹ Select a total of 12 additional credits from upper-division Mathematics courses except courses ending in -80 to -99.

² Select 12 additional credits from MATH 261, ECE 311, ECE 312, upper-division Mathematics, Computer Science, Data Science, or Statistics courses, except courses ending in -80 to -99 and except for MATH 369, DSCI 369, STAT 301, and STAT 307.

³ Select enough elective credits to bring program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level).