MAJOR IN MATHEMATICS, APPLIED MATHEMATICS CONCENTRATION

Requirements
Effective Fall 2023

A minimum grade of C 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 160	Calculus for Physical Scientists I (GT-MA1)	1B	4
MATH 161	Calculus for Physical Scientists II (GT-MA1)	1B	4
MATH 192	First Year Seminar in Mathematical Sciences		1
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	6
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)		1C	3
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	3
Social and Behavioral Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)		3C	3
Elective			3
	Total Credits		**30**

Sophomore

MATH 261	Calculus for Physical Scientists III		4
PH 141	Physics for Scientists and Engineers I (GT-SC1)	3A	5
PH 142	Physics for Scientists and Engineers II (GT-SC1)	3A	5
STAT 315	Intro to Theory and Practice of Statistics		3
Select one course from the following:			2-4
CS 220	Discrete Structures and their 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:			4
MATH 340	Intro to Ordinary Differential Equations		
MATH 345	Differential Equations		
Select four credits from the following:			4
CS 150B	Culture and Coding: Python (GT-AH3)	3B,3B	
CS 152	Python for STEM		
CS 162	CS1--Introduction to Java Programming		
CS 164	CS1--Computational Thinking with Java		
MATH 151	Mathematical Algorithms in Matlab I		
STAT 158	Introduction to R Programming		
	Total Credits		**30-33**

Junior

MATH 317	Advanced Calculus of One Variable	4B	3
MATH 450	Introduction to Numerical Analysis I	4A	3
MATH 451	Introduction to Numerical Analysis II		3
Select two courses from the following:			6
MATH 301	Introduction to Combinatorial Theory		
MATH 331	Introduction to Mathematical Modeling		
MATH 332	Partial Differential Equations		
MATH 360	Mathematics of Information Security		
Biological and Physical Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences)[1]		3A	3
Mathematical Sciences[2]			3
Related Area[3]			6
Elective			3
	Total Credits		**30**

Senior

JTC 300	Strategic Writing and Communication (GT-CO3)	2	3
MATH 435	Projects in Applied Mathematics	4C	3
Select one course from the following:			3
MATH 417	Advanced Calculus I		
MATH 419	Introduction to Complex Variables		
MATH 430/ECE 430	Fourier and Wavelet Analysis with Apps		
MATH 460	Information and Coding Theory		
Mathematical Sciences[2]			6
Related Area[3]			6
Electives[4]			6-9
	Total Credits		**27-30**
	Program Total Credits:		**120**

1. Select from the list of courses (in a department other than Physics) in category 3A in the AUCC.
2. Select from upper-division MATH, CS, STAT courses, except those ending in –80 to –99.
3. A coherent set of courses outside the Mathematics Department in which mathematics is applied, approved by the concentration coordinator.
4. Select enough elective credits to bring the program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level).