

# MAJOR IN MATHEMATICS, ACTUARIAL SCIENCE CONCENTRATION

## Requirements Effective Fall 2022

A minimum grade of C (3.000) 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
ECON 202	Principles of Microeconomics (GT-SS1)	3C	3
ECON 204	Principles of Macroeconomics (GT-SS1)	3C	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 ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )		3B	3
Biological and Physical Sciences ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences</a> ) <sup>1</sup>		3A	5
Diversity, Equity, and Inclusion ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion</a> )		1C	3
Elective			1
<b>Total Credits</b>			<b>30</b>

### Sophomore

ACT 210	Introduction to Financial Accounting		3
FIN 310	Financial Markets and Institutions		3
Select one course from the following:			2-4
CS 220	Discrete Structures and their Applications		
MATH 235	Introduction to Mathematical Reasoning		
MATH 261	Calculus for Physical Scientists III		4
MATH 369	Linear Algebra I	4A	3
STAT 315	Intro to Theory and Practice of Statistics		3
Select four credits from the following:			4
CS 150A	Culture and Coding: Java (GT-AH3)	3B	
CS 150B	Culture and Coding: Python (GT-AH3)	3B	
CS 152	Python for STEM		
CS 158/MATH 158	Mathematical Algorithms in C		
CS 163	CS1—No Prior Programming Experience		
CS 164	CS1—Computational Thinking with Java		
MATH 151	Mathematical Algorithms in Matlab I		
MATH 152	Mathematical Algorithms in Maple		
STAT 158	Introduction to R Programming		
Biological and Physical Sciences ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences</a> ) <sup>1</sup>		3A	5

Historical Perspectives ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives</a> )	3D	3
<b>Total Credits</b>		<b>30-32</b>
<b>Junior</b>		
FIN 300 <sup>2</sup>	Principles of Finance	3
ECON 335/AREC 335	Introduction to Econometrics	3
JTC 300	Strategic Writing and Communication (GT-C03)	2
MATH 317	Advanced Calculus of One Variable	4B
STAT 420	Probability and Mathematical Statistics I	3
STAT 421	Introduction to Stochastic Processes	3
STAT 430	Probability and Mathematical Statistics II	3
Select one course from the following:		4
MATH 340	Intro to Ordinary Differential Equations	
MATH 345	Differential Equations	
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )	3B	3
Elective		2
<b>Total Credits</b>		<b>30</b>
<b>Senior</b>		
BUS 205	Legal and Ethical Issues in Business	3
FIN 342	Risk Management and Insurance	3
FIN 370	Financial Management-Theory and Application	3
MATH 495 <sup>3</sup>	Independent Study	1
Select one course from the following:		3
MATH 417	Advanced Calculus I	4C
MATH 435	Projects in Applied Mathematics	4C
Electives <sup>4</sup>		15-17
<b>Total Credits</b>		<b>28-30</b>
<b>Program Total Credits:</b>		<b>120</b>

<sup>1</sup> Students in this concentration must take a total of 10 credits in category 3A, and at least one course must have a laboratory component.

<sup>2</sup> Students in this concentration may need to obtain a prerequisite override from the appropriate department to enroll in this class.

<sup>3</sup> Preparation for Exam I administered by the Society of Actuaries.

<sup>4</sup> 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).