MAJOR IN MATHEMATICS, ACTUARIAL SCIENCE CONCENTRATION

TO PREPARE FOR FIRST SEMESTER: The curriculum for the Major in Mathematics, Actuarial Sciences Concentration assumes students enter college prepared to take calculus. Entering students who are not prepared to take calculus will need to fulfill pre-calculus requirements in the first semester: MATH 117, MATH 118, MATH 124, MATH 125, MATH 126. A minimum grade of C (3.000) is required in all mathematics, statistics, and computer science courses that are required for graduation.

Major Completion Map

Distinctive Requirements for Degree Program:

Freshman

Semester 1		Critical	Recommended	AUCC	Credits
CO 150	College Composition (GT-CO2)			1A	3
ECON 202	Principles of Microeconomics (GT-SS1)	X		3C	3
MATH 160	Calculus for Physical Scientists I (GT-MA1)	X		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	3
Pre-Calculus Requirements must be completed by the end of Semester 1, if needed (MATH 117, MATH 118, MATH 124, MATH 125, MATH 126).		X			
	Total Credits				**14**

Semester 2		Critical	Recommended	AUCC	Credits
ECON 204	Principles of Macroeconomics (GT-SS1)		X	3C	3
MATH 161	Calculus for Physical Scientists II (GT-MA1)		X	1B	4
Biological and Physical Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences)				3A	5
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)				1C	3
	Total Credits				**15**

Sophomore

Semester 3		Critical	Recommended	AUCC	Credits
ACT 210	Introduction to Financial Accounting		X		3
MATH 261	Calculus for Physical Scientists III		X		4
Biological and Physical Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences)				3A	5
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)				3D	3
ECON 204, MATH 161 must be completed by the end of Semester 3.		X			
	Total Credits				**15**

Semester 4		Critical	Recommended	AUCC	Credits
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 369	Linear Algebra I	X		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				
ACT 210, MATH 261 must be completed by the end of Semester 4.		X			
	Total Credits				**15-17**
Junior					
Semester 5		**Critical**	**Recommended**	**AUCC**	**Credits**
FIN 300	Principles of Finance		X		3
JTC 300	Strategic Writing and Communication (GT-CO3)		X	2	3
STAT 420	Probability and Mathematical Statistics I		X		3
Select one course from the following:					4
MATH 340	Intro to Ordinary Differential Equations				
MATH 345	Differential Equations				
Elective					2
	Total Credits				**15**
Semester 6		**Critical**	**Recommended**	**AUCC**	**Credits**
ECON 335/ AREC 335	Introduction to Econometrics				3
MATH 317	Advanced Calculus of One Variable	X		4B	3
STAT 421	Introduction to Stochastic Processes				3
STAT 430	Probability and Mathematical Statistics II		X		3
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)				3B	3
MATH 317 and FIN 300 must be completed by the end of Semester 6.		X			
	Total Credits				**15**
Senior					
Semester 7		**Critical**	**Recommended**	**AUCC**	**Credits**
FIN 342	Risk Management and Insurance	X			3
FIN 370	Financial Management-Theory and Application		X		3
Select one course from the following:					3
Must take either MATH 417 (Fall) or MATH 435 (Spring) as a capstone.					
MATH 417	Advanced Calculus I			4C	
Elective					
Electives					6
STAT 420 must be completed by the end of Semester 7.		X			
	Total Credits				**15**
Semester 8		**Critical**	**Recommended**	**AUCC**	**Credits**
BUS 205	Legal and Ethical Issues in Business	X			3
MATH 495	Independent Study	X			1
Select one course from the following:		X			3
Must take either MATH 417 (Fall) or MATH 435 (Spring) as a capstone.					
MATH 435	Projects in Applied Mathematics			4C	
Elective					
Electives		X			6-8
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
	Total Credits				**13-15**
	Program Total Credits:				**120**