

STATISTICAL AND ACTUARIAL MATHEMATICS, BACHELOR OF SCIENCE - SAM

Major Requirements (60 Hours)

Code	Title	Credits
Required		
MATH 131 & MATH 132 or MATH 133	Calculus I and Calculus II Theory and Application of Calculus	4-8
MATH 225	Foundations of Higher Mathematics	3
MATH 231	Calculus III	4
MATH 326	Linear Algebra and Differential Equations	4
MATH 496	Pro-Seminar	2
CPSC 207 & 207L	Computer Programming and Computer Programming Laboratory	3
MATH 252	Financial Mathematics	3
MATH 345	Probability	3
MATH 346	Statistics	3
MATH 372	Stochastic Models	3
Required		
One of the following:		3
CPSC 390 or MATH 388	Special Topics BIG (Business, Industry, Government) Problems in Mathematics	
Electives		
Select six additional hours at the 300-400 level (above 302):		6
CPSC 315 or CPSC 328	Simulation: Theory and Application Data Structures	
MATH 335	Differential Equations II	
MATH 336	Numerical Analysis	
MATH 339	Discrete Mathematics	
MATH 341	Analysis I	
MATH 342	Analysis II	
MATH 353	Abstract Algebra I	
MATH 354	Abstract Algebra II	
MATH 361	Geometry	
MATH 381	Mathematical Modeling	
MATH 388	BIG (Business, Industry, Government) Problems in Mathematics (Can be counted as an elective if CPSC 390 is taken to fulfill the above requirement.)	
MATH 398	Actuarial Exam Preparation I	
MATH 399	Actuarial Exam Preparation II	
MATH 438	Mathematical Programming	
MATH 490	Special Topics	
MATH 497	Independent Study	
Required Supporting Courses		
Select at least 15 hours of science other than mathematics or computer science including one of the following full-year sequences:		15

BIO 155 & BIO 156 & BIO 157 & BIO 158 Foundations of Molecular Biology and Foundations of Ecology and Evolution and Foundations of Cellular Biology and Foundations of Form and Function

CHEM 121 & CHEM 122 Principles of Chemistry I and Principles of Chemistry II

PHYS 121 & PHYS 122 General Physics I: Mechanics and Waves and General Physics II: Temperature, Electricity, and Light

Additional mathematics, computer science, or science electives to bring the total to 60 hours if needed 0-4

Recommended Courses

Students who plan to sit for the Actuarial exams should take the following:

BUAD 201 Principles of Financial Accounting

BUAD 312 Principles of Finance

BUAD 313 Investments

ECON 251 Principles of Macroeconomics

ECON 252 Principles of Microeconomics

Total Credits 56-64

Advanced Writing Proficiency

The purpose of this requirement is to nurture the development of mathematical writing in order to deepen the student's understanding of mathematics and to enable the student to communicate technical ideas to a range of audiences. Sophomores are expected to demonstrate proficiency in expository mathematics by the submission of an acceptable portfolio. Juniors are expected to demonstrate proficiency in technical or analytical mathematical writing by the submission of an acceptable portfolio. Seniors demonstrate their ability by completing a senior comprehensive paper, which is evaluated by a committee of three faculty.

Senior Comprehensive

All mathematics majors, in Pro-Seminar (MATH 496 Pro-Seminar), independently study a mathematical topic of their choice and work with a faculty advisor. They present their work in a series of talks in the seminar. The project culminates in a paper and a formal presentation. This final presentation, followed by questioning by a faculty committee, constitutes the Senior Comprehensive in mathematics.

Faculty

S. Cox, C. Dwyer, C. Hoover, K. Kuter, E. Misiolek, P. Paranamana, C. Periton, M. Porter, R. Rohatgi, B. Vajiac, C. Wedrychowicz