

# STATISTICAL AND ACTUARIAL MATHEMATICS, BACHELOR OF ARTS - SAM

## Major Requirements (41-45 Hours)

Code	Title	Credits
<b>Required</b>		
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
<b>Required</b>		
One of the following:		3
CPSC 390 or MATH 388	Special Topics BIG (Business, Industry, Government) Problems in Mathematics	
<b>Electives</b>		
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	
<b>Recommended Courses</b>		
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** 41-45

## 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