COMPUTING AND APPLIED MATHEMATICS, BACHELOR OF SCIENCE - CAM

Major Requirements (59–64 Hours)

Code	Title	Credits
Required		
MATH 131 & MATH 132	Calculus I and Calculus II	4-8
or MATH 133	Theory and Application of Calculus	
MATH 225	Foundations of Higher Mathematics	3
MATH 231	Calculus III	4
MATH 326	Linear Algebra and Differential Equations	4
MATH 339	Discrete Mathematics	3
MATH 496	Pro-Seminar	2
CPSC 207 & 207L	Computer Programming and Computer Programming Laboratory	3
CPSC 328	Data Structures	3
Electives		
Select three of the following:		9
MATH 335	Differential Equations II	
MATH 336	Numerical Analysis	
MATH 341	Analysis I	
MATH 342	Analysis II	
MATH 345	Probability	
MATH 346	Statistics	
MATH 353	Abstract Algebra I	
MATH 354	Abstract Algebra II	
MATH 361	Geometry	
MATH 372	Stochastic Models	
MATH 381	Mathematical Modeling	
MATH 388	BIG (Business, Industry, Government) Problems in Mathematics	
MATH 438	Mathematical Programming	
Select three of the following:		9-10
CPSC 307	C and Assembly Language Programming	
CPSC 308	Electronic Communications	
CPSC 315	Simulation: Theory and Application	
CPSC 417	Systems Analysis and Design	
CPSC 429	Database Systems	
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	
Total Credits		**59-64**

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.