



BACHELOR OF SCIENCE
 MAJOR IN MATHEMATICS
 Computer Science Concentration

Fall 2004

For the student seeking a B.S. degree in mathematics who plans to specialize further in the area of computer science. This program is designed to train students so as to have a background of applied mathematics and a concentration in computer science which will satisfy technical and non-technical employers' needs.

See Liberal Arts and Sciences general education requirements in the General Education section of the undergraduate catalog.

Required Core Courses (35 hours):

MA	125	Introduction to Mathematics	1 hour
CS	220	Introduction to Computer Science	3 hours
CS	260	Programming and Problem Solving	3 hours
MA	161	Calculus I*	5 hours
MA	240	Discrete Mathematics	3 hours
MA	262	Calculus II	5 hours
MA	263	Calculus III	3 hours
MA	322	Introduction to Linear Algebra	3 hours
MA	380	Probability and Statistics	3 hours
MA	425	Abstract Algebra	3 hours
MA	735	Advanced Calculus I	3 hours

Required Courses for Concentration in Computer Science (12 hours):

CS	340	Algorithms and Data Structures I	3 hours
CS	345	Algorithms and Data Structures II	3 hours
CS	350	Programming Languages	3 hours
Select 1 of the following:			
CS	555	Principles of Computer Organization	3 hours
CS	557	Operating Systems	
CS	561	System Programming	

Electives:

MA	291	Mathematical Modeling	CS	557	Operating Systems
CS	315	Java Programming	CS	561	System Programming
CS	320	Computer Networks & Internets	MA	591	Topics in Mathematics
CS	325	HTML Programming	MA	715	Topology
MA	335	Differential Equations I	MA	727	Groups, Rings, and Fields
CS	340	Algorithms and Data Structures I	MA	728	Vector Spaces
CS	345	Algorithms and Data Structures II	MA	733	Mathematical Statistics II
CS	350	Programming Languages	MA	734	Complex Variables
MA	421	College Geometry	MA	736	Advanced Calculus II
CS	444	Database Organization	MA	740	Number Theory
CS	501	Advanced Computer Programming	CS	760	Numerical Analysis
MA	532	Mathematical Statistics I	CS	762	Optimization Techniques
CS	542	Discrete Structures	CS	763	Simulation Techniques
CS	545	Database Theory	MA	764	Regression Analysis
CS	552	Principles of Software Engineering	CS	765	Numerical Linear Algebra
CS	555	Principles of Computer Organization	MA	791	Topics in Mathematics

*A student not sufficiently prepared for MA 161 may be required to take MA 160 (Functions of Calculus) first. In addition to the required courses above, students are encouraged to consult with their advisor about selecting additional courses from computer science, mathematics, statistics, business, accounting, economics, physics, biology, and chemistry in order to complete the 70 hour major.