

BACHELOR OF SCIENCE
MAJOR IN MATHEMATICS
Fall 2004

The Bachelor of Science degree with a major in mathematics is recommended for the student desiring considerable specialization in mathematics. Courses selected according to the student's objective will prepare him/her for employment as a mathematician in industry or government, in the fields of science, engineering, computers, statistics, business, economics, and actuarial science.

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

Additional Required Courses for this option (12 hours)

Select two of the following			
MA	335	Differential Equations I	3 hours each
MA	734	Complex Variables	6 hours total
CS	760	Numerical Analysis	
CS	762	Optimization Techniques	
CS	765	Numerical Linear Algebra	
Select two of the following			
MA	727	Groups, Rings, and Fields	3 hours each
MA	728	Vector Spaces	6 hours total
MA	736	Advanced Calculus II	
MA	740	Number Theory	

Electives:

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