



Mathematics BA Degree Checklist

Required Mathematics Courses – 27 credits	Credits	Grade	Semester Completed
53.125 Calculus I	3		
53.126 Calculus II	3		
53.185 Discrete Mathematics	3		
53.225 Calculus III	3		
53.226 Calculus IV	3		
53.241 Probability and Statistics	3		
53.314 Linear Algebra	3		
53.410 Math Modeling	3		
53.310 Abstract Algebra	3		
OR			
53.421 Advanced Calculus	3		

Required Computer Science Courses – 6 credits	Credits	Grade	Semester Completed
56.121 Object-Oriented Programming with Java	4		
56.122 Graphical User Interfaces in Java	4		
OR			
56.121 Object-Oriented Programming with Java	4		
Any mathematics course 56.300 or higher	3		
OR			
56.123 Visual Basic I	3		
56.223 Visual Basic II	3		

Mathematics Electives – 6 credits	Credits	Grade	Semester Completed
Must be numbered 300 or higher. Must include at least one of 322, 360, 421, 422.			
	3		
	3		

BS Concentration – 9 credits	Credits	Grade	Semester Completed
Select one 9-credit concentration from approved list (see last page).			
	3		
	3		
	3		



General Education Requirements – 46 credits		Credits	Grade	Semester Completed
Communication 9 credits	20.101 English Composition I	3		
	20.201 English Composition II or writing course.	3		
	Other Communication: Speech, Foreign Language, etc.	3		
Quantitative and Analytical Reasoning – 3 credits		53.126 Calculus 2	3	
Values 3 credits				
HPE 2 credits				
Group A: Humanities 12 credits from 3 departments.	(One Communications or Values)			
Group B: Social Sciences 12 credits from 3 departments.				
Group C: Natural Science 12 credits from 3 departments.	53.125 Calculus I	3		
Diversity 2 from approved list. May be double counted.				

Free Electives and/or Minor – at least 26 credits	Credits	Grade	Semester Completed
Total			

**BS Degree Concentrations****Applied Mathematics – 9 credits**

53.322 Differential Equations
53.342 Design and Analysis of Experiments
53.343 Applied Regression Analysis
53.361 Coding and Signal Processing
53.381 Operations Research
53.385 Combinatorial Graph Theory
53.461 Probability Models and Applications
53.462 Introduction to Mathematical Statistics
53.471 Numerical Analysis*
53.472 Matrix Computation*

Actuarial Science – 9 credits

53.343 Applied Regression Analysis
53.381 Operations Research
53.461 Probability Models and Applications
53.462 Introduction to Mathematical Statistics

Graduate School Preparation – 9 credits

The following two are required. One counts as a core class in the major.

53.310 Abstract Algebra
53.421 Advanced Calculus

Take any two from:

53.360 Number Theory
53.385 Combinatorial Graph Theory
53.411 Group Theory*
53.422 Complex Variables
53.451 Topology*

Statistics – 9 credits

53.240 Statistical Methods
53.243 Non-Parametrics Statistics
53.342 Design and Analysis of Experiments
53.343 Applied Regression Analysis
53.441 Mathematics and Sport
53.446 Biostatistics
53.461 Probability Models and Applications
53.462 Introduction to Mathematical Statistics

Computer Science – 9 credits

Any three CS courses numbered 56.221 or higher.

Physics – 9 credits

Any 3 physics courses numbered 54.300 or higher.

General Notes:

1. The “three courses” requirement implies three different courses and at least 9 credits.
2. Courses with an asterisk are not regularly offered, but might be taken by individualized instruction.
3. Appropriate *Special Topics* courses may be used as substitutions with the permission of the advisor and department chair.