

# MATHEMATICS BACHELOR OF SCIENCE DEGREE

This program to be placed on moratorium Fall 2020—no new students enrolling in this program.

## Learning Outcomes for Math Department (<https://catalog.msubillings.edu/undergraduate/college-liberal-arts-social-sciences/department-mathematics/>)

1. Demonstrate proficiency in geometry, algebra, calculus, mathematical analysis, probability and statistics, and discrete mathematics.
2. Read, comprehend, critique, and construct rigorous mathematical arguments and proofs.
3. Effectively use technology such as (but not limited to) computer algebra systems, statistical software, and calculators to solve, analyze, or explore mathematics problems.
4. Demonstrate effective communication of mathematics through collaborative projects and presentations.

## Required Courses

Code	Title	Credits
General Education Requirements ( <a href="https://catalog.msubillings.edu/undergraduate/general-education-requirements/">https://catalog.msubillings.edu/undergraduate/general-education-requirements/</a> )		31
Students should consult with their advisors to determine if specific courses are necessary in order to satisfy the General Education requirements within this major.		
Language Requirement ( <a href="https://catalog.msubillings.edu/undergraduate/college-liberal-arts-social-sciences/#barequirementstext">https://catalog.msubillings.edu/undergraduate/college-liberal-arts-social-sciences/#barequirementstext</a> )		8
<b>Required Core Courses</b>		
CSCI 111A	Programming with Java I	4
M 110	Mathematical Computing	1
M 171	Calculus I *	4
M 172	Calculus II	4
M 242	Methods of Proof	3
M 273	Multivariable Calculus	4
M 274	Intro Differential Equations	4
M 305	Discrete Structures I	4
M 329	Modern Geometry	3
M 333	Linear Algebra	4
M 371	Numerical Computing	4
M 431	Abstract Algebra I	3
M 471	Mathematical Analysis	3
M 472	Intro to Complex Analysis	3
M 499	Capstone	3
STAT 341	Intro Probability & Statistics	4
Subtotal		55
<b>Minor (Optional)</b>		<b>21</b>
<b>Electives</b>		<b>5</b>
<b>Total Minimum Credits</b>		<b>120</b>

\* May satisfy General Education requirements

Certain courses in this program have prerequisites; students should check the course descriptions for required prerequisites.

## Suggested Plan of Study

The following sample schedule is a suggested plan for students to follow in completing the Bachelor of Science Major in Mathematics. Due to course schedule changes and staff assignments, students may not be able to follow the plan exactly. Students should consult with their advisors to plan classes before registering each semester.

Code	Title	Credits
<b>First Year</b>		
Fall		
WRIT 101	College Writing I	3
M 171	Calculus I	4
CSCI 111A	Programming with Java I	4
Language		4
Total		15
Spring		
M 110	Mathematical Computing	1
M 172	Calculus II	4
Language		4
General Education		6
Total		15
<b>Second Year</b>		
Fall		
M 305	Discrete Structures I	4
M 273	Multivariable Calculus	4
General Education		8
Total		16
Spring		
M 242	Methods of Proof	3
M 333	Linear Algebra	4
STAT 341	Intro Probability & Statistics	4
General Education		4
Total		15
<b>Third Year</b>		
Fall		
M 329	Modern Geometry	3
M 471	Mathematical Analysis	3
General Education		3
Minor		6
Total		15
Spring		
M 472	Intro to Complex Analysis	3
M 371	Numerical Computing	4
General Education		3
Minor		6
Total		16
<b>Fourth Year</b>		
Fall		
M 431	Abstract Algebra I	3

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M 499	Capstone	3
Minor		6
Electives		3
Total		15
Spring		
M 274	Intro Differential Equations	4
Minor		3
Electives		2
General Education		4
Total		13