

BACHELOR OF SCIENCE IN MATHEMATICS

COURSE	TITLE	S.H.
FIRST YEAR REQUIREMENT -STUDENT SUCCESS		
YSU 1500	Success Seminar	1-2
or SS 1500	Strong Start Success Seminar	
or HONR 1500	Intro to Honors	
General Education Requirements		
ENGL 1550	Writing 1	3-4
or ENGL 1549	Writing 1 with Support	
ENGL 1551	Writing 2	3
CMST 1545	Communication Foundations	3
Mathematics Requirement (met with MATH in major)		
Arts and Humanities (6 s.h.)		
Natural Sciences (2 courses, 1 with lab) (6-7 s.h.)		
Social Science (6 s.h.)		
Social and Personal Awareness (6 s.h.)		
Major Requirements		
Core Courses		
Foreign Language Requirement		
Foreign Language Requirement		
MATH 1571	Calculus 1	4
MATH 1572	Calculus 2	4
MATH 2673	Calculus 3	4
MATH 3715	Discrete Mathematics	3
MATH 3720	Linear Algebra and Matrix Theory	3
MATH 3721	Abstract Algebra 1	4
MATH 3751	Real Analysis 1	4
STAT 3743	Probability and Statistics	4
CSIS 2610	Programming and Problem-Solving	3
CSIS 2610L	Programming and Problem-Solving Lab	1
Select one of the following:		
MATH 4896	Senior Undergraduate Research Project	2
MATH 4897H	Thesis	
STEM 4890	STEM Internship	
Select two 3700-level or higher MATH/STAT/DATX courses.		
Select two 4800-level MATH/STAT/DATX courses.		
Minor Courses:		
Select any discipline.		
Elective from any discipline		
Select three other electives from any discipline		
Total Semester Hours		120-122

Suggested minors include biology, chemistry, computer science, economics, geology, physics, psychology, one engineering specialty (from chemical, civil, electrical, industrial, mechanical), or statistics. The total number of required semester hours of credit in mathematics (excluding statistics courses) is 40.

Year 1		S.H.
Fall		
YSU 1500	Success Seminar	1-2
or SS 1500	or Strong Start Success Seminar	
or HONR 1500	or Intro to Honors	
MATH 1571	Calculus 1	4
ENGL 1550	Writing 1	3-4
or ENGL 1549	or Writing 1 with Support	

GER domain (AH)	3
Foreign Language Requirement	4
Elective	2
Semester Hours	
17-19	

Spring		S.H.
MATH 1572	Calculus 2 (Prerequisite)	4
ENGL 1551	Writing 2	3
CSIS 2610	Programming and Problem-Solving	3
CSIS 2610L	Programming and Problem-Solving Lab	1
Foreign Language Requirement		4
Semester Hours		15

Year 2		S.H.
Fall		
MATH 2673	Calculus 3 (Prerequisite)	4
MATH 3715	Discrete Mathematics (Prerequisite)	3
Minor Course		
GER domain (NS with lab)		
GER domain (AH)		
Semester Hours		17

Spring		S.H.
MATH 3720	Linear Algebra and Matrix Theory (Prerequisite)	3
STAT 3743	Probability and Statistics (Prerequisite)	4
Minor Course		
CMST 1545	Communication Foundations	3
GER domain (SS)		
Semester Hours		16

Year 3		S.H.
Fall		
MATH 3721	Abstract Algebra 1 (Prerequisite)	4
Minor Course		
GER domain (SP)		
GER domain (NS)		
Semester Hours		13

Spring		S.H.
MATH 3751	Real Analysis 1 (Prerequisite)	4
MATH/STAT/DATX Elective (Upper Division)		
Minor Course		
GER domain (SP)		
GER domain (SS)		
Semester Hours		16

Year 4		S.H.
Fall		
MATH 4896	Senior Undergraduate Research Project (Prerequisite)	2
MATH/STAT/DATX Elective (Upper Division)		
Minor Course (Upper Division)		
Elective		
Elective		
Semester Hours		14

Spring		S.H.
MATH/STAT/DATX elective (4800 level or higher)		
MATH/STAT/DATX elective (4800 level or higher)		
Minor Course		

Elective	3
Semester Hours	12
Total Semester Hours	120-122

Learning Outcomes

The student learning outcomes for a BS in mathematics are as follows:

- Students will develop and demonstrate the ability to reason mathematically by constructing mathematical proofs and recognizing and accurately analyzing numerical data in all core courses. Students will learn that truth in mathematics is verified by careful argument, and will demonstrate the ability to make conjectures and form hypotheses, test the accuracy of their work, and effectively solve problems.
- Students will learn to identify fundamental concepts of mathematics as applied to science and other areas of mathematics, and to interconnect the roles of pure and applied mathematics.
- Students will demonstrate that they can communicate mathematical ideas effectively by completing a senior capstone project involving an investigative mathematical project and presenting their findings and results in both a written format and as an oral presentation to faculty and other students.