The B.S. in Mathematics

All students pursuing a B.S. in Mathematics are required to take a series of overlapping sequences:

- Calculus Sequence: Calculus I, II, III
- Transition Sequence: Foundations of Mathematics, Geometry
- Algebra Sequence: Linear Algebra, Number Theory, Abstract Algebra
- Analysis Sequence: Differential Equations, Complex Variables, Mathematical Analysis
- Capstone Sequence: Intro to Research in Math, Senior Project

The calculus sequence is a standard three-course sequence where the emphasis is on problem-solving but with some attention, when appropriate, to the formal arguments which underlie the theory. The transition sequence is designed to provide an increasingly rigorous introduction to proof so as to better prepare students for the algebra and analysis sequences. The algebra sequence leads students through an increasingly rigorous treatment of topics in algebra, while the analysis sequence leads students through an increasingly rigorous treatment of topics in analysis. The capstone sequence is designed to provide students with the opportunity to conduct undergraduate research under the direction of a faculty mentor. One additional 4000-level MATH elective is also required.

The courses within each sequence should be completed in the order listed above for each sequence. For example, the student should take Differential Equations, Complex Variables, and Mathematical Analysis in that order.

Here is one possible plan for completing the five sequences for a student who begins with Calculus I:

	Fall	Spring
Freshman	Calculus I	Calculus II Linear Algebra
Sophomore	Calculus III Foundations	Differential Equations Geometry
Junior	Complex Variables Number Theory	Mathematical Analysis Intro to Research in Math
Senior	Abstract Algebra Senior Project	

We will offer one 4000-level MATH elective per year. Students are advised to take a 4000-level MATH elective when it is offered (provided they meet the prerequisite).

Students who are pursing the Teaching Concentration are also required to take:

- Concepts of Geometry and Measurement in Secondary Mathematics (MAED 3119)
- Concepts of Number and Algebra in Secondary Mathematics (MAED 3121)

MAED 3119 and MAED 3121 will be offered every other year. Students should be sure to take MATH 3030 (Foundations) in the sophomore year and then take the two MAED courses in either the junior or senior year.

Requirements for the Pure Option

- Calculus I, II, III (MATH 1261, 1262, 2263)
- Linear Algebra (2150)
- Foundations of Mathematics (3030)
- Differential Equations (4340)
- Geometry (4510)
- Number Theory (4110)
- Complex Variables (4300)
- 4000-level MATH elective
- Abstract Algebra (4081)
- Mathematical Analysis (4261)
- Introduction to Research in Mathematics (4989)
- Senior Project (4990)
- Physics I, II (PHYS 2211, 2211L, 2212, 2212L) or Chemistry I, II (CHEM 1211, 1211L, 1212, 1212L)
- Computer Science I, II (CSCI 1301, 1302)
- Elementary Statistics (MATH 1401)

Requirements for the Teaching Concentration

- Calculus I, II, III (MATH 1261, 1262, 2263)
- Linear Algebra (2150)
- Foundations of Mathematics (3030)
- Differential Equations (4340)
- Geometry (4510)
- Number Theory (4110)
- Complex Variables (4300)
- 4000-level MATH elective
- Abstract Algebra (4081)
- Mathematical Analysis (4261)
- Introduction to Research in Mathematics (4989)
- Senior Project (4990)
- Concepts of Geometry and Measurement in Secondary Mathematics (MAED 3119)
- Concepts of Number and Algebra in Secondary Mathematics (MAED 3121)
- Physics I (PHYS 2211 & 2211L)
- Computer Science I (CSCI 1301)
- Elementary Statistics (MATH 1401)
- Seminar: Exp Teach/Math & Sci (Project Focus EDIS 4425)

Course Rotation

Fall

MATH 1261 Calculus I
MATH 1262 Calculus II
MATH 2263 Calculus III
MATH 2150 Linear Algebra
MATH 3030 Foundations of Mathematics
MATH 4340 Differential Equations
MATH 4081 Abstract Algebra
MATH 4300 Complex Variables
MATH 4110 Number Theory
MAED 3119 Concepts of Geom and Measure in Secondary Math - offered every other fall
MATH 4990 Senior Project

Spring

MATH 1261 Calculus I
MATH 1262 Calculus II
MATH 2263 Calculus III
MATH 2150 Linear Algebra
MATH 3030 Foundations of Mathematics
MATH 4340 Differential Equations
MATH 4261 Mathematical Analysis
MATH 4510 Geometry
MAED 3121 Concepts of Number and Algebra in Secondary Math - offered every other spring
MATH 4989 Intro to Research in Math

We will offer at least one 4000-level MATH elective per year.

The B.S. program in Data Science, which will be offered through Department of Information Systems and Computer Science, will begin in Fall 2022. The three 4000-level MATH courses which are required by this program will be offered every other year as follows:

- Even year Spring semester: MATH 4600
- Even year Fall semester: MATH 4100
- Odd year Spring MATH 4700

The cycle will begin in Spring 2024 follows:

- Spring 2024 MATH 4600
- Fall 2024 MATH 4100
- Spring 2025 MATH 4700