



Mathematics, B.S. *major*

General Emphasis

A total of 120 semester credits are needed for the **Mathematics, General emphasis B.S. degree** and include the following:

- 40 upper division credits (level 3000/4000)
- 44 required major core credits
- Completion of Core Curriculum credits (Minnesota Transfer Curriculum [MnTC] Goal Areas 1-10) - required for all baccalaureate degrees
- Completion of BSU Focus and Nisidotaading Course Requirements

Dual Degrees

Students wishing to complete two degrees concurrently, (example: Bachelor of Science and Bachelor of Arts) must complete a minimum of an additional 30 credits above the required 120 credits.

Multiple Credentials

Any additional major, minor or certificate in a degree must have at least 6 credits of course work not used to meet the requirements of another major, minor or certificate in the degree.

Required Credits: 44

Required GPA: 2.25

I REQUIRED CORE COURSES

Complete the following courses:

- MATH 2210 Discrete Mathematics (4 credits)
- MATH 2471 Calculus I (5 credits)
- MATH 2472 Calculus II (5 credits)
- MATH 2480 Multivariable Calculus (4 credits)
- MATH 3310 Linear Algebra (4 credits)

GENERAL EMPHASIS

COMPLETE THE FOLLOWING COURSE:

- STAT 3631 Probability and Statistics I (4 credits)

SELECT 1 OF THE FOLLOWING COURSES:

- MATH 4350 Abstract Algebra (3 credits)
- MATH 4371 Modern Algebra (3 credits)
- MATH 4410 Introduction to Analysis (3 credits)

REQUIRED ELECTIVES

SELECT 5 COURSES (not used above) FROM THE FOLLOWING:

- CSCI 2322 Computer Science II (4 credits)
- MATH 2490 Differential Equations (4 credits)
- MATH 3260 Mathematical Problem Solving (3 credits)
- MATH 3440 Introduction to Fractals & Chaos (3 credits)
- MATH 3560 Classical and Modern Geometry (3 credits)
- MATH 3710 Mathematical Modeling (3 credits)
- MATH 3720 Numerical Methods (3 credits)
- MATH 3820 History of Mathematics (3 credits)
- MATH 4240 Number Theory (3 credits)
- MATH 4350 Abstract Algebra (3 credits)
- MATH 4371 Modern Algebra (3 credits)
- MATH 4410 Introduction to Analysis (3 credits)
- MATH 4760 Topics in Applied Mathematics (3 credits)
- STAT 3610 Time Series Analysis (3 credits)

- STAT 3632 Probability and Statistics II (3 credits)

Program Learning Outcomes | Mathematics, B.S.

1. Knowledge: Students will understand the content and methods of the core areas of undergraduate mathematics.
2. Analysis: Students will identify, interpret and analyze problems, discern structure and pattern and make conjectures.
3. Application: Students will apply appropriate procedures and technology to solve problems.
4. Proof: Students will apply creative and analytic thinking to develop clear and valid mathematical arguments.
5. Communication: Students will communicate mathematical ideas and understanding effectively.
6. Career Readiness: Students will be prepared for careers in industry and further study in mathematics.