# Department of Mathematics

Course Catalog - Fall 2025

## Department Overview:

The Mathematics Department focuses on pure and applied mathematics including calculus, linear algebra, probability, and mathematical modeling. Courses build rigorous problem-solving skills and support interdisciplinary applications in data science and engineering.

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Course Listings  
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Course Code: MATH 101

Course Title: Calculus I

Credits: 4

Description: Limits, derivatives, and applications of differentiation. Weekly problem sessions and  
calculus labs.

Prerequisites: None

Instructor: Dr. Isaac Newton

Schedule: Mon/Wed/Fri 11:00 AM - 12:20 PM

Course Code: MATH 102

Course Title: Calculus II

Credits: 4

Description: Techniques of integration, sequences and series, parametric equations, and polar  
coordinates.

Prerequisites: MATH 101

Instructor: Prof. Sophie Germain

Schedule: Tue/Thu 9:30 AM - 10:50 AM

Course Code: MATH 201

Course Title: Linear Algebra

Credits: 3

Description: Vector spaces, matrices, eigenvalues, and applications to data and systems.

Prerequisites: MATH 101

Instructor: Dr. David Hilbert

Schedule: Mon/Wed 2:00 PM - 3:15 PM

Course Code: MATH 230

Course Title: Discrete Mathematics

Credits: 3

Description: Logic, sets, combinatorics, graph theory, and basic proof techniques. Useful for CS  
majors.

Prerequisites: None

Instructor: Prof. George Boole

Schedule: Tue/Thu 1:00 PM - 2:15 PM

Course Code: MATH 310

Course Title: Probability and Statistics

Credits: 3

Description: Probability theory, distributions, estimation, hypothesis testing, and introduction to  
statistical modeling.

Prerequisites: MATH 102

Instructor: Dr. Ronald Fisher

Schedule: Wed/Fri 9:00 AM - 10:15 AM

Course Code: MATH 320

Course Title: Differential Equations

Credits: 3

Description: Ordinary differential equations, modeling, and solution techniques with applications to  
physics and engineering.

Prerequisites: MATH 102

Instructor: Prof. Jean Leray

Schedule: Mon/Wed 3:30 PM - 4:45 PM

Course Code: MATH 340

Course Title: Real Analysis

Credits: 3

Description: Rigorous treatment of limits, continuity, sequences and series, and foundational  
analysis concepts.

Prerequisites: MATH 102 or instructor permission

Instructor: Dr. Bernhard Riemann

Schedule: Tue/Thu 3:00 PM - 4:15 PM

Course Code: MATH 360

Course Title: Numerical Methods

Credits: 3

Description: Numerical solution of equations, interpolation, numerical integration, and error  
analysis. Programming assignments included.

Prerequisites: MATH 201

Instructor: Prof. Katherine Johnson

Schedule: Fri 1:00 PM - 3:50 PM (Lab)

Course Code: MATH 410

Course Title: Mathematical Modeling

Credits: 3

Description: Methods for building and analyzing mathematical models in biology, economics, and  
engineering.

Prerequisites: MATH 201

Instructor: Dr. John von Neumann

Schedule: Wed 10:00 AM - 12:50 PM (Workshop)

Course Code: MATH 480

Course Title: Senior Thesis Seminar

Credits: 3

Description: Capstone seminar for independent research and thesis preparation under faculty  
guidance.

Prerequisites: Instructor permission (after 300-level coursework)

Instructor: Math Faculty Team

Schedule: Thu 2:00 PM - 4:50 PM