# Mathematics

## Degrees Offered

- Bachelor of Arts
- Bachelor of Science

## Nature of the Program

The Department of Mathematics provides a curriculum for:

- Students wishing to earn an undergraduate major or minor in mathematics
- Students enrolled in elementary and secondary teacher programs
- Students interested in the applications of mathematics to the fields of computer science, statistics, engineering, physical, natural and social science, and business and economics
- Non-science majors, to educate them in the ideals and objectives of mathematics

Students who earn a degree in the Eberly College of Arts and Sciences must complete the University requirements, the College requirements for their specific degree program, and their major requirements.

## Area of Emphasis

Students enrolled in the B.S. in Mathematics have the opportunity to earn an Area of Emphasis in six different areas. All majors take a core selection of Mathematics courses and choosing an optional Area of Emphasis guides the choice of additional courses toward various career pathways.

- Actuarial Science
- Computational Mathematics
- Mathematical Biology
- Mathematics Education
- Physical Applied Mathematics
- Pure Mathematics

Students may not earn both a Bachelor of Arts and a Bachelor of Science in Mathematics.

## Minors

All students have the possibility of earning one or more minors; view a  list of all available minors and their requirements (http://catalog.wvu.edu/undergraduate/minors/) here. Please note that students may not earn a minor in their major field.

## Mathematics Learning Center

The Mathematics Learning Center is a free walk-in tutoring center open 5-days a week. It is located at ARM 301B and the hours are posted on the door or on the Mathematics Department webpage.  The MLC tutors help with all undergraduate Mathematics courses through Calculus.  The MLC also employees students who are proficient in Mathematics.  For more information about the center you can call (304)293-2011 or contact Dr. Renee LaRue at reneelarue@math.wvu.edu.

## FACULTY

### DIRECTOR OF THE SCHOOL OF MATHEMATICAL AND DATA SCIENCES

- Earl Scime - Ph.D. (University of Wisconsin-Madison)
  Regular Graduate Faculty, Plasma Physics

### ASSOCIATE DIRECTOR FOR DATA SCIENCES

- Snehalata Huzurbazar - Ph.D. (Colorado State University)
  Regular Graduate Faculty, Data Sciences

### ASSOCIATE DIRECTOR FOR THE INSTITUTE FOR MATH LEARNING

- Lori Ogden - Ph.D. (West Virginia University)
  Associate Graduate Faculty, Undergraduate Mathematics Education

## ASSOCIATE DIRECTOR FOR MATHEMATICS

- Adrian Tudorascu - Ph.D. (Carnegie Mellon University)
  Regular Graduate Faculty, Partial Differential Equations, Optimal Transport

## ASSOCIATE DIRECTOR FOR STATISTICS

- Kenneth Ryan - Ph.D. (Iowa State University)
  Regular Graduate Faculty, Semi-supervised learning and design of experiments

## ASSISTANT DIRECTOR FOR GRADUATE STUDIES

- Adam Halasz - Ph.D. (State University of New York at Stony Brook)
  Regular Graduate Faculty, Mathematical Biology

## ASSISTANT DIRECTOR FOR UNDERGRADUATE STUDIES

- David Miller - Ph.D. (Oklahoma State University)
  Regular Graduate Faculty, Undergraduate Math Education; Cognitive Science; STEM Education

## PROFESSORS

- Krzysztof Ciesielski - Ph.D. (Warsaw University)
  Regular Graduate Faculty, Analysis, Topology, Set theory, MRI imaging
- Marjorie Darrah - Ph.D. (West Virginia University)
  Regular Graduate Faculty, Algorithm Development, Educational Technologies, K-12 Outreach
- Jessica Deshler - Ph.D. (University of New Mexico)
  Regular Graduate Faculty, Undergraduate Mathematics Education, Equity in Mathematics, Graduate Student Development
- Harvey Diamond - Ph.D. (Massachusetts Institute of Technology)
  Regular Graduate Faculty, Approximation theory, Applied mathematics
- Harry Gingold - D.Sc. (Israel Institute of Technology)
  Regular Graduate Faculty, Discrete Finite Difference systems of Equations, Factorization of Power Series, Foundation (Geometry), Mathematical Cryptography, Optimization, Compactification, Ordinary Differential Systems of Equations, Asymptotics, Approximations, Turning point theory, Celestial Mechanics
- John Goldwasser - Ph.D. (University of Wisconsin-Madison)
  Regular Graduate Faculty, Combinatorics, Graph theory
- Erin Goodykoontz - Ed.D. (West Virginia University)
  Associate Graduate Faculty, Introductory Concepts of Mathematics
- Harumi Hattori - Ph.D. (Rensselaer Polytechnic Institute)
  Regular Graduate Faculty, Partial Differential Equations, Mathematical Finance, Conservation Laws and Shock Wave
- Snehalata Huzurbazar - Ph.D. (Colorado State University)
  Regular Graduate Faculty, Data Sciences
- Hong-Jian Lai - Ph.D. (Wayne State University)
  Regular Graduate Faculty, Graph theory, Matroid theory
- Dening Li - Ph.D. (Fudan University)
  Regular Graduate Faculty, Partial differential equations, Shock Theory
- Rong Luo - Ph.D. (West Virginia University)
  Regular Graduate Faculty, Graph Theory, Discrete Math
- David Miller - Ph.D. (Oklahoma State University)
  Regular Graduate Faculty, Undergraduate Math Education, Cognitive Science, STEM Education
- Robert Mnatsakanov - Ph.D. (Tbilisi State University)
  Regular Graduate Faculty, Applied probability, Approximation of functions from moments, Risk models
- Laura Pyzdrowski - Ed.D. (West Virginia University)
  Regular Graduate Faculty, Undergraduate Math Education, Cognitive Science, STEM Education, K-12 Outreach, Distance Learning, Instructional Technology
- Kenneth Ryan - Ph.D. (Iowa State University)
  Regular Graduate Faculty, Semi-supervised learning and design of experiments
- Adrian Tudorascu - Ph.D. (Carnegie Mellon University)
  Regular Graduate Faculty, Partial Differential Equations, Optimal Transport
- Jerzy Wojciechowski - Ph.D. (University of Cambridge)
  Regular Graduate Faculty, Combinatorics, Graph theory

- Fang Yang - Ph.D. (Middle Tennessee State University)
  Associate Graduate Faculty, Actuarial Science

## ASSOCIATE PROFESSORS

- Olgur Celikbas - Ph.D. (University of Nebraska)
  Regular Graduate Faculty, Commutative Algebra, Homologic Algebra
- Vito D'Orazio - Ph.D. (Pennsylvania State University)
  Regular Graduate Faculty, Data Sciences
- Adam Halasz - Ph.D. (State University of New York at Stony Brook)
  Regular Graduate Faculty, Molecular systems biology, Monte Carlo methods, Mathematical physics
- Renee LaRue - Ph.D. (West Virginia University)
  Associate Graduate Faculty, Undergraduate Mathematics Education
- Kevin Milans - Ph.D. (University of Illinois)
  Regular Graduate Faculty, Combinatorics, Graph Theory, and Partially Ordered Sets
- Lori Ogden - Ph.D. (West Virginia University)
  Associate Graduate Faculty, Undergraduate Mathematics Education
- Casian Pantea - Ph.D. (University of Wisconsin-Madison)
  Regular Graduate Faculty, Mathematical biology, dynamical systems
- Vicki Sealey - Ph.D. (Arizona State University)
  Regular Graduate Faculty, Calculus Coordinator, Undergraduate Math Education, Calculus Student Learning
- Charis Tsikkou - Ph.D. (Brown University)
  Regular Graduate Faculty, Hyperbolic and Mixed Type Partial Differential Equations, Conservation Laws

## ASSISTANT PROFESSORS

- Ela Celikbas - Ph.D. (University of Nebraska)
  Regular Graduate Faculty, Commutative Algebra, Representation Theory
- Srinjoy Das - Ph.D. (University of California, San Diego)
  Regular Graduate Faculty, Data Sciences
- Ryan Hansen - Ph.D. (West Virginia University)
  Combinatorics
- Cody Hood - Ph.D. (West Virginia University)
  Undergraduate Mathematics Education
- Guangming Jing - Ph.D. (Georgia State University)
  Regular Graduate Faculty, Combinatorics, Graph Theory
- Mihyun Kim - Ph.D. (Colorado State University)
  Regular Graduate Faculty, Statistics
- Jason Palmer - Ph.D. (University of California, San Diego)
  Regular Graduate Faculty, Statistics
- Matthew Schraeder - Ph.D. (West Virginia University)
  Undergraduate Mathematics Education
- Dylan Wilson - Ph.D. (Northwestern University)
  Regular Graduate Faculty, Differential Geometry, Topology
- Qingtian Zhang - Ph.D. (Pennsylvania State University)
  Regular Graduate Faculty, Analysis of PDE, Nonlinear Wave Equation, Free boundary problems in Fluid mechanics

## INSTRUCTORS

- Joelleen Bidwell - M.A. (West Virginia University)
- Krista Bresock - Ph.D. (West Virginia University)
- Seth Cole - M.S. (West Virginia University)
- Jesse Cook - M.S. (West Virginia University)
- Adam Goodykoontz - M.S. (West Virginia University)
- Jennifer Kearns - M.S. (West Virginia University)
- Clark Metz - M.S. (West Virginia University)
- Gabriel Tapia - M.S. (West Virginia University)
- Galyna Voitiuk - Ph.D. (West Virginia University)

- Sylvanus Waibogha - M.S. (West Virginia University)
- Iwona Wojciechowska - Ph.D. (West Virginia University)

## PROFESSORS EMERITI

- Gary Ganser - Ph.D. (Rensselaer Polytechnic Institute)
  Modeling, Data Analysis
- Jack T. Goodykoontz Jr. - Ph.D. (University of Kentucky)
  Topology
- Henry W. Gould - M. A. (University of Virginia)
  Number Theory, Combinatorics, Special Functions
- Caulton L. Irwin - Ph.D. (Emory University)
  Associate director, N.R.C.C.E. Variational methods, Optimization, Applied mathematics
- Michael E. Mays - Ph.D. (Pennsylvania State University)
  Number Theory
- Sherman D. Riemenschneider - Ph.D. (Syracuse University)
  Approximation Theory, Wavelets, Signal Processing
- Cun-Quan Zhang - Ph.D. (Simon Fraser University)
  Eberly Distinguished Professor of Mathematics, Graph theory, Combinatorics, Algorithms, Bioinformatics, Data Mining

# Admissions

- First Time Freshmen are admitted to the major directly. For the timely completion of the degree, it is recommended that students have a minimum MATH ACT of 22, a MATH SAT of 540, or an ALEKS score of 45.
- Students transferring from another WVU major must have completed MATH 154 or MATH 155 with C- or higher and have earned a 2.0 overall GPA.
- Students transferring from another institution must have completed MATH 154 or MATH 155 with C- or higher and have earned a 2.0 overall GPA.

## ADMISSION REQUIREMENTS 2024-2025

The Admission Requirements above will be the same for the 2024-2025 Academic Year.

Major Code: 1457

# Degree Progress

- By the end of their the second semester (excluding summer) in the major, at minimum, students must have completed MATH 126 with a minimum grade of C-.
- By their 5th semester in the major, students should have completed calculus courses through MATH 261 with a minimum grade of C- and have satisfactorily completed or be enrolled in MATH 303.
- Normally, students must register for 9 hours of math each subsequent term.
- All majors must meet with a math department adviser each semester.

Students who fail to meet these benchmarks may be removed from their major.