MATHEMATICAL SCIENCES

The Department of Mathematical Sciences at the University of Wisconsin-Milwaukee is home to an active community of teachers, scholars, undergraduates, and graduate students. In addition to most traditional areas of Pure and Applied Mathematics, the department contains all UWM programs in Actuarial Science.

The department offers Bachelor's, Master's, and Doctoral studies in all of these areas, in addition to several interdisciplinary programs. Established in 1963, the PhD in Mathematics is the original doctoral program at UWM, founded by Dr. Morris Marden (http://uwm.edu/math/graduate/resources/history-of-our-graduate-program/morris-mardens-biography/).

In addition, together with Computer Science (in the College of Engineering and Applied Science), we offer the Applied Math and Computer Science Bachelor of Science degree, as well as a Data Science Bachelor of Science degree.

Mathematics is the principal language of modern science and technology. In such diverse areas as physics, engineering, economics, computer science, and biology, much of the subject matter is presented in mathematical terms. In addition, mathematical techniques are now being used in many areas which formerly were non-mathematical; for example, history, political science, psychology, and medicine.

Some students are drawn to mathematics because of the beauty they find in its structure and logic, others because it allows a deeper understanding of an allied area of study.

Actuarial science is the mathematical analysis of problems in economics, finance, and insurance. It requires knowledge of statistics, probability, and interest theory and how they relate to financial issues.

Data science uses large sets of data — sometimes millions of pieces of data — to describe or solve some of the world's toughest problems. Data scientists use those large sets of information to describe what's happening, explain why it's happening, predict what's likely to happen and make decisions about what action to take.

The **Applied Mathematics and Computer Science** degree combines core subjects in the two fields, preparing students for work in industrial and technology fields.

Students of the sciences, engineering, computer science, economics, and business often complete a significant number of mathematical sciences credits. These students are encouraged to take a mathematics major or minor, which adds an official recognition of important analytical skills valued by employers and graduate schools.

Students interested in teaching mathematics at the K-12 level should consult the School of Education section of this catalog.

For the Mathematics, Actuarial Science, Applied Math & Computer Science, and Data Science programs, please visit the department web page at https://uwm.edu/math/ and follow the links to the undergraduate program for more information.

There are three curricular areas in the Department of Mathematical Sciences:

- Actuarial Science (ACTSCI)
- Mathematics (MATH)
- Mathematical Statistics (MTHSTAT)

Undergraduate Studies - We offer two minors and five undergraduate degrees:

- Bachelor of Science Degrees: Mathematics; Applied Mathematics and Computer Science (AMCS); Data Science (the latter two jointly with the Computer Science department)
- Bachelor of Arts Degrees: Mathematics; Actuarial Science
- Minors: Mathematics; Actuarial Science

Graduate Studies in Mathematical Sciences

The Department has a vibrant graduate program leading to both the Master of Science and Doctor of Philosophy degree in Mathematics. In addition to traditional areas of Mathematics and Statistics, our graduate offerings include UW-Milwaukee's Actuarial Science programs. The department also offers a newly established dual degree in mathematics with Fachhochschule Aachen (Aachen University of Applied Sciences) in Germany. Students may prepare for careers in teaching at the secondary or college level and for careers in research in the academic, industrial, government, or business communities.

See below for detailed program information and requirements.

- Actuarial Science, BA (https://catalog.uwm.edu/letters-science/mathematical-sciences/actuarial-science-ba/)
- Actuarial Science, Minor (https://catalog.uwm.edu/letters-science/mathematical-sciences/actuarial-science-minor/)
- Applied Math and Computer Science, BS (College of Letters and Science, Department of Mathematical Sciences) (https://catalog.uwm.edu/letters-science/mathematical-sciences/applied-math-computer-science-bs/)
- Data Science, BS (College of Letters and Science, Department of Mathematical Sciences) (https://catalog.uwm.edu/letters-science/mathematical-sciences/data-science-bs/)
- Mathematics, BA (https://catalog.uwm.edu/letters-science/mathematical-sciences/mathematics-ba/)
- Mathematics, BS (https://catalog.uwm.edu/letters-science/mathematical-sciences/mathematics-bs/)
- Mathematics, Minor (https://catalog.uwm.edu/letters-science/mathematical-sciences/mathematics-minor/)
- Mathematics, MS (https://catalog.uwm.edu/letters-science/mathematical-sciences/mathematics-ms/)
- Mathematics, MS: Actuarial Science (https://catalog.uwm.edu/letters-science/mathematical-sciences/mathematics-actuarial-science-ms/)
- Mathematics, MS: Statistics (https://catalog.uwm.edu/letters-science/mathematical-sciences/mathematics-statistics-ms/)

- Mathematics, PhD (https://catalog.uwm.edu/letters-science/mathematical-sciences/mathematics-phd/)

Faculty

Name	Rank	Degree	School	Graduate Faculty	Emeritus Faculty
Fredric D. Ancel	Professor	PhD			✔
James E. Arnold Jr.	Associate Professor	PhD			✔
Jay H. Beder	Professor	PhD			✔
Allen D. Bell	Associate Professor	PhD			✔
Rebecca Bourn	Faculty Associate	PhD	University of Virginia		
Suzanne L. Boyd	Associate Professor	PhD	Cornell University	✔	
Vytaras Brazauskas	Professor	PhD	University of Texas at Dallas	✔	
Dashan Fan	Professor	PhD			✔
Jonah Gaster	Assistant Professor	PhD	University of Illinois at Chicago	✔	
Daniel Gervini	Professor	PhD	Universidad de Buenos Aires	✔	
Jugal K. Ghorai	Professor	PhD			✔
Craig R. Guilbault	Professor	PhD	University of Tennessee	✔	
Robert L. Hall	Associate Professor	PhD			✔
Pamela E. Harris	Associate Professor	PhD	University of Wisconsin-Milwaukee	✔	
Peter Hinow	Professor	PhD	Vanderbilt University	✔	
Yang Ho	Clinical Professor	PhD			✔
Ingrid Holzner	Senior Lecturer	MS			✔
G. Christopher Hruska	Professor	PhD	Cornell University	✔	
Eric S. Key	Professor	PhD			✔
Kelly Kohlmetz	Senior Lecturer	PhD	University of Wisconsin-Milwaukee		
Vincent Larson	Professor	PhD	Massachusetts Institute of Technology	✔	
Istvan G. Lauko	Associate Professor	PhD	Texas Tech University	✔	
Cheng-Ming Lee	Professor	PhD			✔
Tzu-Chu Lin	Professor	PhD			✔
Gary Luck	Senior Lecturer	MS			✔
Kevin B. McLeod	Associate Professor	PhD	University of Minnesota	✔	
Richard J. Mihalek	Associate Professor	PhD			✔
Albert J. Milani	Professor	PhD			✔
Robert H. Moore	Associate Professor	PhD			✔
Ian M. Musson	Professor	PhD			✔
Thomas O'Bryan	Associate Professor	PhD			✔
Richard J. O'Malley	Professor	PhD			✔
Boris L. Okun	Professor	PhD	State University of New York at Binghamton	✔	
Gabriella Pinter	Professor	PhD	Texas Tech University	✔	
Ahmed H. Sameh	Adjunct Professor	PhD			✔
David H. Schultz	Professor	PhD			✔
Steven Schwengels	Senior Lecturer	MS			✔
Lindsay A. Skinner	Professor	PhD			✔
Panayiotis Skordi	Clinical Professor	PhD	Curtin University		
Donald W. Solomon	Associate Professor	PhD			✔
David Spade	Associate Professor	PhD	The Ohio State University	✔	
Richard Stockbridge	Distinguished Professor	PhD	University of Wisconsin-Madison	✔	
Lijing Sun	Associate Professor	PhD	Wayne State University	✔	

Anastasios Tsonis	Distinguished Professor	PhD			✔
Xianwei Van Harpen	Senior Lecturer	PhD	Illinois State University		
Hans W. Volkmer	Professor	PhD			✔
Bruce Wade	Professor	PhD			✔
Gilbert G. Walter	Professor	PhD			✔
Lei Wang	Associate Professor	PhD	University of Michigan	✔	
Jeb Willenbring	Professor	PhD	University of California, San Diego	✔	
Dexuan Xie	Professor	PhD	University of Houston	✔	
Chao Zhu	Professor	PhD	Wayne State University	✔	
Yi Ming Zou	Professor	PhD			✔