

MATHEMATICS, MINOR

Mathematics is the international language of science and technology. Much of the subject matter in engineering and the natural sciences, as well as some social sciences such as economics, is presented in mathematical terms. Mathematical and statistical techniques are vital in fields that usually are not considered mathematical, such as biology, psychology, and political science.

Some students come to mathematical sciences with the intention of teaching in high school or college or pursuing research in mathematics. Some are attracted to mathematics for its own sake, for the beauty, discipline, logic, and problem-solving challenges. Other students pursue mathematics in order to achieve deeper understanding in their own areas of study.

Many students assume that most math majors become teachers. While many do, there are many other opportunities for math majors. The United States National Security Agency is the largest employer of math majors in the country. Math majors will also be found at NASA; in engineering firms; at insurance and risk management firms; in robotics and computer science companies; at large and small corporations working in market research, data management and web management; at social media start ups and established firms like YouTube; and any place that needs to make decisions based on numerical facts.

Most mathematics courses belong in one of the following four groups: applied mathematics, computational mathematics, pure mathematics, and statistics.

- Applied Mathematics is a discipline using mathematical analysis to solve problems coming from outside the field of mathematics.
- Computational mathematics is closely related to applied mathematics. It emphasizes techniques of scientific computing and other computational analysis.
- Pure mathematics emphasizes the theory and structure underlying all areas of mathematics.
- Statistics is a field of mathematics that provides strategies and tools for using data to gain insight into real-world and experimental problems.

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.

Requirements

Students minoring in mathematics must complete 18 credits in mathematical sciences (curricular areas Math and MthStat and ActSci) courses numbered 200 and above, of which 9 credits must be upper-division (numbered 300 and above) courses taken in residence at UWM.

The minor in mathematics is not available to students pursuing the Actuarial Science major, the Applied Math and Computer Science degree, or the Bachelor of Science in Data Science. Students who wish to complete both a minor in mathematics and Actuarial Science must complete at least an additional 6 credits of upper division courses in Math/Mthstat/ActSci courses not required by the Actuarial Science minor.

The College of Letters and Science requires that students attain at least a 2.0 GPA on all credits in the minor attempted at UWM. In addition, student must attain a 2.0 GPA on all minor credits attempted, including any transfer work. The minor is available as a post-baccalaureate option for students who have graduated.

Letters & Science Minor Advising

Advising for the minor takes place within the department by a faculty member or staff member. Follow the steps using the "Declare a Minor" button on the department's website which may include instructions on how to select a faculty advisor if there is more than one to choose from.

Students who already have an L&S college advisor because their degree plan is in L&S can discuss the minor with them as well since they will be familiar with any minor in L&S. Students who are working on a degree from a UWM college other than the College of Letters & Science will not need an L&S college advisor for just a minor and one will not be assigned. These students should work with the faculty or staff advisor they receive as part of the minor declaration process or contact the department directly for assistance.

Applicants who have not started classes at UWM yet who wish to declare a minor should wait until they are registered for their first UWM classes and then can declare the minor using the "Declare a Minor" button on the program's website. If you have questions about the minor before then, contact let-sci@uwm.edu.