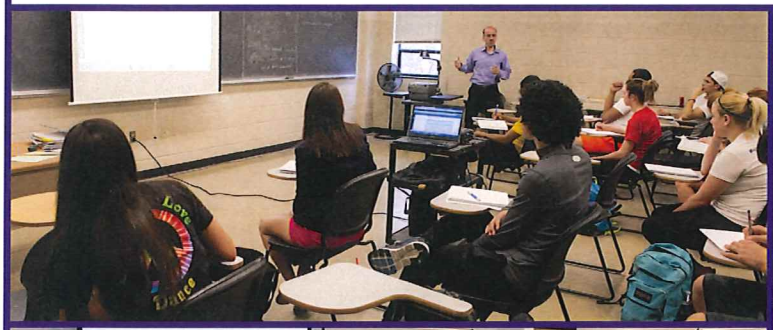
Mathematics

Department of Mathematics and Philosophy, College of Arts and Sciences



Major Program

Mathematics is among the most fascinating of all intellectual disciplines, the purest of all art forms, and the most challenging of games. Mathematicians make contributions to society by helping to solve problems in such diverse fields as medicine, management, economics, government, computer science, social science, physics, and engineering.

The Department of Mathematics and Philosophy offers three degree options: (1) the Bachelor of Science (BS) in Mathematics, (2) the BS in Mathematics–Teacher Education, and (3) the BS in Computational and Data-Enabled Sciences. All majors complete core courses in calculus and linear algebra. At the upper-division level, students choose from a rich collection of pure and applied courses in mathematics and statistics.

The Department of Mathematics and Philosophy also offers minors in mathematics and statistics. Additionally, mathematics courses are offered supporting the pre-engineering program and the mathematics area of concentration in elementary education.

Students who have completed an advanced placement calculus course may be granted credit based upon their scores. Other students who have studied calculus in high school may take a proficiency examination administered by the department for college credit and advanced placement in calculus.

Pure or Applied Mathematics Option

The classical mathematics option is designed to be sufficiently flexible to allow for individual interests and some specialization based upon career goals. In this option, the student is exposed to a rich combination of mathematical areas in pure and applied mathematics. Additionally, the student is directed to complete a sequence of two courses in a chosen area of interest, such as algebra, analysis, applied mathematics, logic, or statistics. This option invites the student to study many examples of fascinating effectiveness in mathematics and its profound connections while acquiring problem-solving skills and sharpening one's analytical thinking.

Teacher Education Option

Students in this comprehensive major earn a degree in mathematics and obtain an Illinois Professional Educator License to teach mathematics in grades 9-12. Students may also choose to obtain a license for teaching mathematics in grades 6-8. The program produces teachers who can find employment and share their knowledge and appreciation of mathematics with the youth of Illinois and other states. Some majors of this option continue into graduate school and then may teach mathematics at the community college, college, or university level. In all cases, the graduates of this program have the opportunity to impact and inspire future generations by exposing them to the beauty and power of mathematics.

Computational and Data-Enabled Option

Computational and data-enabled sciences is an intellectual and technological discipline, employing both theory and experimentation in data analysis and lying at the intersection of applied mathematics, statistics, and computer science. Using modern quantitative modeling and data analysis techniques, this interdisciplinary major provides the foundation for application of advanced mathematics and computational methods to solve problems in engineering, natural sciences, industry, business, finance, and economics.

Faculty and Resources

The department has more than 30 faculty members with teaching and research interests in many areas of pure and applied mathematics, statistics, and mathematics education. The faculty has a strong commitment to undergraduate students.

The resources in the Mathematics Resource Office (MRO) are available for all of our students and professors.

In addition to University computer facilities, the Department of Mathematics and Philosophy has its own newly-renovated computer lab. This lab is used to supplement instruction in areas such as computer algebra systems and their usage, differential equations, and mathematical modeling.

Scholarships

The Department of Mathematics and Philosophy has several scholarships available to new students, including the Mathematics Alumni Scholarships and the four-year F. Glenadine Gibb Mathematics Education Scholarship. Applications for scholarships may be obtained from the department. Detailed information on scholarships is available from the department website at wiu.edu/cas/mathematics_and_philosophy/academic/scholarships.php or from the University's Scholarship Office, (309) 298- 2001, wiu.edu/Scholarship.

Honors in Mathematics

To be eligible for the Centennial Honors College, entering freshmen must meet two of the following three criteria: Have an 1160 SAT (24 ACT), have a 3.4/4.0 GPA or higher, or be in the top 15 percent of their graduating class. Transfer and current Western students who wish to join the Honors College (including the Quad Cities Honors Program) must have a 3.4 grade point average on a 4.0 scale based on 12 or more semester hours. Honors credit is given for honors coursework completed at accredited institutions. To find out more, visit wiu.edu/Honors.

General honors seminars in the humanities, sciences, and social sciences provide students with the opportunity to explore key academic issues with distinguished faculty members. In the Mathematics major, honors students may receive honors designation in any math course by working with the instructor on an individually tailored project.

Student Activities

The Department of Mathematics and Philosophy sponsors a chapter of Kappa Mu Epsilon, a national mathematics honor society, and a student chapter of the Mathematics Association of America. The student officers plan a variety of group activities of interest to members. Math TEAM (Together Everyone Achieves More) is a student group for prospective teachers; its mission is to provide future mathematics teachers at all levels with opportunities to learn mathematics and the teaching of mathematics. Mathematical Opportunities for Students and Teachers (MOST) is another student group, which provides information about employment opportunities for our majors.

For Your General Outlook

In the Mathematics major, students generally take Calculus I and II in the first two terms. They continue with Calculus III, Linear Algebra, and Logic and Sets in the second year. In the third and fourth years, a variety of required and elective advanced mathematics courses are offered, and students choose their courses based on their interests and with help from their adviser.

Special Opportunities

Mathematics majors are encouraged to take a special course entitled Undergraduate Research. This course involves the dedicated, individual pursuit of a mathematical topic or application from an area of research that is represented within the department, culminating in a final paper or presentation to peers and faculty. All students are encouraged to present their work at the University's annual Undergraduate Research Day. For more information, please visit our website at wiu.edu/cas/mathematics_and_philosophy/academic/undergraduate-research/index.php.

Mathematics majors also may become qualified to be employed either as undergraduate teaching assistants in Intermediate Algebra, as tutors in the Academic Assistance Center for Mathematics, or as helpers in grading papers.

After College

Our graduates have been successful in pursuing interesting and rewarding careers. Some are working in industry with such companies as Caterpillar, Inc.; Deere and Company; and McDonnell-Douglas. Some are working in business for such companies as Arthur Andersen, Hewitt Associates, and State Farm; and many are teaching throughout Illinois and the region as well as elsewhere. Many of our graduates have also successfully pursued graduate degree programs and hold positions in research and college teaching.

For More Information

Additional information about the department's programs, scholarships, and other financial assistance may be obtained from the Department of Mathematics and Philosophy by visiting Morgan Hall 476, by calling (309) 298-1054 or 298-2467, by faxing (309) 298-1857, by e-mailing mathphil@wiu.edu, or by visiting our website at wiu.edu/cas/mathematics_and_philosophy.

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Department of Mathematics and Philosophy
Morgan Hall 476 • Western Illinois University
1 University Circle • Macomb, IL 61455-1390
Phone: (309) 298-1054

Updated July 2018

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