Mathematics

Undergraduate Programs

MAJORS:
- Mathematics (traditional)
- Mathematics Education
- Mathematics with Applied Emphasis
- Statistics
- Statistics: Concentration in Actuarial Science
- Mathematics/Engineering Dual Degree

MINORS:
- Mathematics (traditional)
- Mathematics Education
- Mathematics Elementary/Middle Education
- Statistics

The Mathematics Department offers courses for mathematics majors through the College of Science and Health and the School of Education. Most mathematics majors require 36 to 40 credits. Class sizes are small; calculus classes are typically 25 to 30 students and upper level classes are typically 10 to 20 students.

Department Overview

The Mathematics Department consists of over thirty teacher-scholars who are dedicated to excellence in undergraduate education. In addition to our teaching program, department members are engaged in a variety of scholarship, research, and professional service activities including: conducting traditional research-scholarship, supporting undergraduate mathematics research programs, participating in national mathematics organizations, and performing middle/high school mathematics outreach activities. Research interests within the department include algebra, analysis, combinatorics, fluid dynamics, graph theory, harmonic analysis, logic, mathematics education, numerical analysis, topology, and statistics.

As one of the traditional academic disciplines, mathematics is an integral part of the liberal arts education and is the foundation for many areas of study. In filling many roles at UWL, the Mathematics Department serves a diverse group of students; we nurture all liberal arts students, give students a solid foundation from which to study both the natural and social sciences, provide the tools needed by students in professional programs, and cultivate mathematics majors. We strive to prepare our majors and minors for careers in teaching, business, industry, government, and graduate study.

Department members regard mathematics as an interesting and lively subject, and an accessible major or minor for any student. Mathematics has both an aesthetic and a practical appeal; the enjoyment of problem solving, abstract thinking, and structural beauty draws many to mathematics, while the challenge and satisfaction of using mathematics to solve real-world problems provides an equally strong appeal. If you enjoy mathematics and want to learn more, we invite you to come study with us.

Mathematics Department
1020 Cowley Hall
608.785.6603
www.uwlax.edu/mathematics

Mathematics

Program Coursework

All of the mathematics majors require the core calculus sequence. Other required courses, as well as the particular electives allowed, vary by the particular major.

Mathematics (traditional):
- Calculus I
- Calculus II
- Logic and Discrete Mathematics
- Linear Algebra with Differential Equations
- Calculus III: Multivariate
- Calculus Real Analysis I
- Abstract Algebra I
- 3 Elective Courses

Mathematics Education:
- Calculus I
- Calculus II
- Logic and Discrete Mathematics
- Probability and Statistics
- Linear Algebra with Differential Equations
- Calculus III: Multivariate Calculus
- Teaching Mathematics with Technology
- Introduction to Modern Geometry
- Teaching & Learning Math and CS in the Secondary School
- Two Elective Courses

Mathematics with Applied Emphasis:
- Calculus I
- Calculus II
- Logic and Discrete Mathematics
- Linear Algebra with Differential Equations
- Calculus III: Multivariate Calculus
- Differential Equations
- Introduction to Numerical Methods
- Mathematical Physics OR Studies in Applied Mathematics
- Three Elective Courses

Statistics:
- Calculus I
- Calculus II
- Probability and Statistics
- Linear Algebra with Differential Equations
- Calculus III: Multivariate
- Statistical Methods
- Statistical Consulting
- Mathematical Statistics I
- Mathematical Statistics II
- Correlation and Regression Analysis
- Analysis of Variance and Design of Experiments
- One Elective Course

Statistics: Concentration in Actuarial Science:
All courses required for Statistics plus the following courses:
- Microeconomics and Public Policy
- Global Macroeconomics
- Accounting Principles I
- Accounting Principles II
- Principals of Financial Management

Mathematics/Engineering Dual Degree:

Required Mathematics Courses:
- Calculus I
- Calculus II
- Logic and Discrete Mathematics
- Linear Algebra and Differential Equations
- Calculus III: Multivariate Calculus
- Probability and Statistics
- Differential Equations
- Introduction to Numerical Methods
- Mathematical Physics or Studies in Applied Mathematics

Required Non-Mathematics Courses:
- General Chemistry I
- General Chemistry II
- Software Design I
- Microeconomics and Public Policy
- Global Macroeconomics
- Women in the U.S. Economy
- General Physics I
- General Physics II
- Classical Mechanics

Mathematics

Department Features

Course offerings include the areas of calculus, differential equations, logic, geometry, linear and abstract algebra, real and complex analysis, numerical methods, graph theory, number theory, probability, statistics, operations research and various applied mathematics areas.

Many mathematics majors and minors also major or minor in chemistry, computer science, physics and business. The department also has an adviser who works closely with elementary education students who wish to minor in mathematics; a mathematics minor is a strong complement to an elementary education major.

Outside the classroom, there are many opportunities for students to actively pursue their interests in mathematics and statistics.
- A student run Mathematics and Statistics Club meets at various times during each semester. Activities include talks by students and invited speakers, picnics, travel to conferences and friendly sporting contests with other clubs or faculty.
- Students work with faculty on research projects. These students have the opportunity to present their results at state and national meetings and publish their results in the UWL Journal of Undergraduate Research.
- Students can participate in local, regional and international mathematics or statistics modeling contests.
- The Mathematics faculty hosts an honors reception for all mathematics majors and minor each spring. At this reception an Outstanding Graduating Senior Award is presented and a scholarship is given to the outstanding junior mathematics major.
- The Mathematics and Statistics Resource Room is located within the department. This room is a place for math majors to study and socialize. There are also computers available for use.
- Math majors can work from 5 to 15 hours a week as a tutor in the Murphy Learning Center or as a peer teaching assistant.
- Students can obtain internships and part-time jobs with local business and engineering firms, public utilities, and medical and governmental research institutions.

Career Opportunities

Demand has been strong, and promises to be so in the future, for the mathematically trained person. Some graduates choose to further their education by attending graduate school in mathematics or a related discipline. For those entering the job market, graduates have found numerous job opportunities that utilize their knowledge and competencies.

Sample of Job Titles of Graduates:
- Manager of Manufacturing Process Engineering, Corning, Inc.
- Actuary, General Casualty Company in Sun Prairie, WI
- Plant Manager, Sunshine Biscuits
- Professor of Statistics, Oberlin College
- Director of the Mathematics and Statistics Learning Center, The Ohio State University
- Statistician, State of Wyoming
- Loan Officer, State Bank of Wonewoc
- Actuary, Blue Cross-Blue Shield of Florida
- Mathematics Teacher, Wisconsin Dells High School
- Senior Statistician, Pharmacia & Upjohn
- Marketing Specialist, IBM in Rochester, MN
- Mathematics Teacher, Platteville High School
- Associate Professor of Mathematics, Wabash College
- Software Developer, Mayo Clinic
- Programmer, IBM at North Carolina-Research Triangle Park
- Marketing Database Analyst, Sportsman's Guide, Inc.
- Mathematics and Physics Teacher, Sheboygan High School
- Data Analyst, Department of Health Science Research, Mayo Clinic
- Mathematics Teacher, Central High School, La Crosse
- Property-Casualty Actuary, Hartford Insurance Company
- Mathematics Teacher, Peace Corps Volunteer in Western Kenya
- Supplier Quality/Component Engineer, Guidant Corp., St. Paul, MN

Occupational Outlook

In a 2009 national study, four of the top five jobs were math related. The 2010-2011 Employment Survey of UWL graduates showed 100 percent of the math graduates were employed in a position related to their major.