

MATHEMATICS

DEPARTMENT OF MATHEMATICS

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WHY A DEGREE IN MATHEMATICS

In the list of “The Best Jobs of 2021” ranked by CareerCast, Mathematician, Statistician, Data Scientist, and Actuary were ranked in the top 8! Jobs based on mathematics are consistently ranked in the top 10 and the growing field has continued to evolve rapidly in the past decade since the mid-2010s.

In addition to a career in mathematics, UNO’s mathematics program can lay the foundation for your advancement in any number of STEM fields: computer science, physics, chemistry, biology, economics, accounting, and electrical, mechanical, and naval engineering.

STUDENT LEARNING OUTCOMES

Through completion of the B.S. in Mathematics, students will:

- Analyze and solve basic and fundamental mathematical and statistical problems requiring analytical and abstract skills.
- Understand the fundamental theorems of calculus, linear algebra, discrete mathematics, differential equations, and advanced calculus.
- Attain technological skills necessary for real-world applications.
- With an Actuarial Concentration, they will apply their mathematical knowledge to actuarial problems.
- With the Undergraduate Certificate in Data Analysis, they will apply their mathematical knowledge to data analysis.

HIGHLIGHTED COURSES

- Calculus I, II, III
- Advanced Calculus (Real Analysis)
- Complex Analysis
- Geometry
- Topology
- Linear Algebra
- Abstract Algebra
- Discrete Mathematics
- Differential Equations
- Optimization
- Elementary Statistics
- Mathematical Statistics
- Analysis of Variance and Experimental Design
- Regression Analysis
- Data Analytics
- Statistical Learning
- Actuarial Probability
- Financial Math
- Quantum Nonlocality and Quantum Computing



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PROGRAM HIGHLIGHTS

- The program introduces students to abstract and analytical problem-solving skills, with emphasis on drawing conclusions from mathematical models, tools, and techniques.
- The curriculum blends core mathematics, science, and humanities classes for the subject's broader usage, before students fulfill all advanced-level requirements for their major.
- The program focuses on four specialized areas: Actuarial Science, Applied Mathematics, Pure Mathematics, Statistics and Data Science.
- The **Actuarial Science Concentration** is an option for a more focused course of study. Courses for 12 credit hours for the concentration are specifically designed to prepare students for the first couple of exams administered by the Society of Actuaries.
- The **Data Analytics Undergraduate Certificate** fits students interested in the career of data scientist and data analyst, the No. 1-rated profession in the Best Jobs of 2021. The required courses prepare students learn how to review and interpret large data sets in professional applications with extensive hands-on practices using computational and statistical software. Core courses include Regression Analysis, Analysis Variance & Experimental Design, Data Analytics, and Statistical Learning. Check the University Catalog for more details.
- The **Accelerated Master's Program (4+1)** offers the opportunity for outstanding students to earn both BS and MS degrees in 5 years. The main feature of the program is that, while completing their undergraduate study, students may earn up to 12 semester hours of graduate credit that counts as a dual credit for both the baccalaureate and master's degree.

PROGRAM STATS ▼

According to the Bureau of Labor Statistics, from 2023 to 2033:

- The overall employment in math occupations is projected to grow much faster than the average for all occupations; this increase is expected to result in about **37,100 new jobs** per year.
- The overall employment of mathematicians and statisticians is projected to grow **11% faster** than the average for all occupations.
- On average, about **2,500 openings** for mathematicians and statisticians are projected each year.

(Data as of April 2025)



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