Love your major | Mathematics

UNIVERSITY OF NEBRASKA AT OMAHA
ARTS & SCIENCES

The Mathematics Department Degree Program prepares students for employment in the private or public sector, graduate school, and scientific research. Studying Mathematics naturally develops quantitative thinking and analytic problem solving, skills with universal application. Demand will always be high for individuals with these universal skills to solve society's diverse and complex problems. Mathematics is a vital part of that problem solving process.

Students majoring in Mathematics now have two choices: building their own area of study with the No Concentration option, or focusing their studies with a Concentration. Each Concentration selects specific high-level mathematics and statistics classes to prepare students for a given field. One popular concentration is Data Science, which prepares students for the new and growing career as a Data Scientist. The Pure Mathematics concentration is a great choice for students interested in Graduate school, while the Education concentration finishes with a certification to teach at the 7-12 level. Talk to an advisor today about your opportunities in the field of Mathematics!

Optional Concentrations Available:

- Applied Mathematics
- Computational Mathematics
- Data Science
- Education
- Operations Research
- Pre-Actuarial Math
- Statistics
- Pure Mathematics

Knowledge & Skills Gained as a Mathematics major:

Knowledge:

In addition to the specific knowledge acquired in each course, all Math majors learn that:

- Mathematics is a universal language
- Mathematics is the art and science of problem solving
- Mathematics is all around us, from the simplistic to the complex
- Mathematics is essential for solving real-world problems
- Calculus is the Mathematics of change
- Logic is the basis for all mathematical reasoning
- Proofs are the essence of Mathematics

Skills:

- Adept at solving quantitative problems
- Ability to understand both concrete and abstract problems
- Proficient in communicating mathematical ideas
- Detail-oriented
- Ability to make critical observations
- Accurately organize, analyze, and interpret data
- Extract important information and patterns
- Assess and solve complex problems
- Able to work independently and on a team
- Optimally prescribe how complex systems should work
- Transform data into information and information into insights

Mathematics Major at a glance:

Number of majors: 154

Degrees offered: B.A. and B.S.

Credit hours needed: 47

Minor offered: Yes

University of Nebraska Omaha

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Career Opportunities

By nature, Liberal Arts majors make great employees in any field because of their ability to communicate effectively, think critically and solve complex problems. These timeless skills make them attractive to employers in all walks of society. Specifically though, Mathematics majors often pursue careers as a:

- Cryptanalyst - developing encryption for cybersecurity for the Defense Department.
- Data scientist - analyzing data to make predictive decisions for a retailer.
- Operations Research Analyst - optimally determining which aircraft an airline should purchase.
- Teacher - teaching math at the 7-12 level.
- Actuary - evaluate risk and help companies make decisions.

When the Mathematics major is matched with complementary minors and thoughtful internships, new possibilities arise. A few examples are:

- **Math** + Biology = Biomathematician: modeling biological processes for a Biotech company.
- **Math** + Graphic Design = Animator: making realistic graphics for a movie.
- **Math** + Forensics = Forensics Analyst: solve crimes for the FBI.
- **Math** + Geology = Hydrologist: solving problems related to water quantity, quality, and availability for the U.S. Geological Survey.
- **Math** + English = Technical writer: writing documents for industries that need writers fluent with numbers and calculations.

Student Opportunities

- Colloquium series with professional Mathematicians
- Data Science Partnerships - helping local companies make better decisions, and gain work experience!
- Calculus Bee - get High School students excited about math!
- Internships with local companies
- Math Club activities to connect with your classmates
- Nebraska Gamma Chapter Pi Mu Epsilon National Honorary Society
- Putnam Exam Competition

Did you know?

The spiral shape inside a sunflower follows a Fibonacci sequence, which is when you add the two preceding numbers in the sequence together to give you the next one: 1, 1, 2, 3, 5, 8, 13, 21, etc.

For more information:

For program information, contacts and course requirements visit:

www.unomaha.edu/math

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