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 could. Students majoring in Math now have two choices, the Concentration option or the No Concentration option. The Concentration in Data Science is a popular choice; it prepares students for a job as a Data Scientist, as well as providing a strong background for many other careers. Data Science is the art and science of transforming raw data into deliverable data products in order to help businesses or government agencies make more informed decisions.

**Concentrations Available:**
- Computational Mathematics
- Data Science
- Education
- Operations Research
- Pre-Actuarial Math
- Research Experience
- Statistics

**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
- Math 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

**Mathematics Major at a glance:**
- **Number of majors:** 161
- **Degrees offered:** B.A. and B.S.
- **Credit hours needed:** 47
- **Minor offered:** Yes
## 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 cyber security for the Defense Department
- Data scientist - analyzing data to make predictive decisions for a retailer
- Operations Research Analyst - determining which aircraft an airline should purchase
- Teacher - Math 7-12
- Actuary

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:

- “Cool Math Talks” Series
- Data Science Partnerships - helping local companies make better decisions
- Fall Calculus Bee
- Internships with local companies
- Math Club sponsors fun activities
- Nebraska Gamma Chapter Pi Mu Epsilon
- National Honorary Society
- Putnam Exam Competition
- Undergraduate Math Contest

### 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/](http://www.unomaha.edu/math/)

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