



# Mathematics MA

## with an emphasis in Data Science

This MA program responds to the growing regional and national demand for professionals with data science knowledge, skills and abilities. Our rigorous course curriculum balances both theory and applications and covers fundamentals of applied mathematics, statistics and data computing. Students acquire a solid command of the fundamental tools in applied mathematics and statistics and build proficiency in statistical computing and modeling, data analysis, data management and data mining. Our faculty are committed to excellence in both teaching and research, and provide personalized mentoring. All program courses may be completed in the evening.

### Career Outlook

Graduates from our program are well prepared to succeed in a broad range of specialized professions, such as: statistician, data scientist, data analyst, operations research analyst, investment data analyst, market research analyst, business intelligence analyst and data engineer. As the national demand for individuals well-trained in statistics and data science is continually increasing, our alumni find employment in all major industries and work for a wide range of companies and government agencies. According to the US Bureau of Labor Statistics, the median annual salary for data science professionals was \$103,500 in 2022. Employment in this field is projected to grow by 35% before 2032.

### Future Career Options

- Business Analyst
- Data Analyst
- Data Scientist
- Investment Analyst
- Market Researcher
- Mathematical Modeler
- Statistician

### Skills Developed By Degree Completion

- Identify, interpret, and manage the computational issues involved in the handling of large volumes of data
- Apply optimization principles and statistical theories to analyze data sets, interpret data, extract meaningful information, and assess findings
- Choose and apply tools and methodologies to solve data science tasks and build and evaluate data-based models
- Apply machine learning techniques to data mining problems

Graduates from our program are regularly hired by top employers. Career counseling is provided by UMSL Career Services. Additional possibilities are taken from the Bureau of Labor Statistics. Contact an advisor to discuss additional future career options.



# IT STARTS RIGHT NOW

This is a sample academic map for the courses to take each academic semester/session. This map is not a substitute for academic advisement. Contact your advisor when making final selections.



## APPLY FOR GRADUATION

Don't forget that students should apply for graduation one year prior to the intended graduation date, so apply prior to the deadline.

**umsl.edu**

888-GO-2-UMSL  
314-516-5451  
[umsl.edu/gradschool](https://umsl.edu/gradschool)

## 2024-2025 2-YEAR ACADEMIC MAP

Year  
**1**

### Master of Science in Mathematics with an emphasis in Data Science

#### FALL SEMESTER (6 credit hours)

MATH 4005: Exploratory Data Analysis with R (3)

MATH 5070: Nonlinear Optimization (3)

#### SPRING SEMESTER (9 credit hours)

MATH 4200: Mathematical Statistics I (3)

MATH 5250: Statistical Methods in Learning and Modeling (3)

Math or Data Science Elective (3)

Year  
**2**

#### FALL SEMESTER (9 credit hours)

MATH 4210: Mathematical Statistics II (3)

Math or Data Science Elective (3)

Math or Data Science Elective (3)

#### SPRING SEMESTER (9 credit hours)

Math or Data Science Elective (3)

Math or Data Science Elective (3)

Check once completed



Last updated May 2024