



# Mathematics and Computational Sciences PhD with an emphasis in Mathematics

Besides its intrinsic beauty, mathematics is nowadays the foundation for scientific development and modern life and production. This PhD program is designed to provide the highest level of academic study and research in mathematical and computational sciences. With this program, students will acquire a broad knowledge of mathematics/statistics and improve problem-solving abilities and analytical skills. Students will delve deeper into the field they love and conduct research with respected faculty. This program can be completed in the evening.

## Career Outlook

The goal of this program is to produce highly qualified professionals for teaching and research positions in industry and government. Our graduates work in education, government, and industry. The site CareerCast.com ranks the mathematician profession among the 10 Best Jobs of 2019, with a projected growth of over 30 percent.

## Future Career Options

- Data Scientist
- Mathematical Modeler
- Mathematician
- Researcher
- Statistician
- University Teacher

## Skills Developed By Degree Completion

- Acquire competency in logical reasoning, handling of advanced mathematical concepts and applying mathematical models to real-world problems
- Demonstrate ability to understand and explain core mathematical concepts related to their area of specialty: Algebra/Geometry/Topology; Applied Mathematics/Computational Mathematics; Probability/Statistics; Data Science
- Formulate new research problems
- Demonstrate understanding of current relevant literature
- Perform independent research in pure and applied mathematics and create original research
- Demonstrate expertise in their research area
- Communicate research effectively in writing and present clearly advanced and mathematical ideas to a mathematics audience

Successful alumni have gone on to fulfill many of the opportunities above. 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

## 2024-2025 4-YEAR ACADEMIC MAP

Year

1

### Mathematics and Computational Sciences PhD with an emphasis in Mathematics

#### FALL SEMESTER (9 credit hours)

MATH 4100: Real Analysis I (3)  
MATH 4160: Complex Analysis I (3)  
Math Elective (3)

#### SPRING SEMESTER (9 credit hours)

MATH 4450: Linear Algebra (3)  
Math Elective (3)  
Math Elective (3)

Year

2

#### FALL SEMESTER (9 credit hours)

Math Elective (3)  
Math Elective (3)  
Math Elective (3)

#### SPRING SEMESTER (9 credit hours)

Math Elective (3)  
Math Elective (3)  
Math Elective (3)

Year

3

#### FALL SEMESTER (9 credit hours)

Math Elective (3)  
Math Elective (3)  
Math Elective (3)

#### SPRING SEMESTER (9 credit hours)

Math Elective (3)  
Math Elective (3)  
Math Elective (3)

Year

4

#### FALL SEMESTER (6 credit hours)

Math Elective (3)  
Math Elective (3)

Check once completed

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Last updated May 2024