

Master of Science in Applied Data Science (Mathematics Teaching)

About This Program

The Master of Science in Applied Data Science with an emphasis in Mathematics Teaching prepares students to analyze and interpret educational and learning data using modern computational and statistical tools. Through coursework in areas such as quantitative assessment, learning analytics, curriculum evaluation, educational measurement, and data-informed instructional design, students gain the knowledge necessary to apply data science techniques to challenges in mathematics education. This emphasis enables students to leverage classroom, assessment, and student-performance datasets to identify learning patterns, improve instructional strategies, evaluate curriculum effectiveness, and generate meaningful insights that support evidence-based teaching. A 3-semester credit hour (SCH) project or professional internship provides hands-on experience applying analytical and computational methods to real-world educational settings. The program can be completed in 18 months (full-time students may complete it in 12 months).

Competencies

1. Upon completion, students will be able to apply statistical methodologies to real-world data from diverse applications.
2. Upon completion, students will be able to understand computational aspects of big data analytics.
3. Upon completion, students will apply statistical methodologies to real-world data from diverse applications, with an emphasis on those within the field of mathematics education.

Admissions Criteria

All applicants for the Applied Data Science MS must meet UT Arlington's [graduate admission requirements](https://catalog.uta.edu/academicregulations/admissions/graduate/) (<https://catalog.uta.edu/academicregulations/admissions/graduate/>). The program does not consider GRE scores in evaluating candidates for admission.

To be considered for admission, applicants must demonstrate undergraduate preparation equivalent to a baccalaureate degree in natural, physical, or social sciences, technology, engineering, mathematics, business, or related fields. To apply for a specific track, applicants must demonstrate sufficient background in that concentration with a relevant bachelor's degree.

Applicants must submit two letters of recommendation from evaluators who can assess the candidate's potential for academic success.

UNCONDITIONAL ADMISSION

Applicants who demonstrate a GPA of 3.0 and strong support from references will be considered for unconditional admission. Applicants with a GPA of 2.7 or higher (but less than 3.0) who demonstrate relevant work experience and/or certification may be offered unconditional admission upon review.

All admitted students must complete the program's self-paced, non-credit online review, "Math Foundation of Machine Learning," prior to enrolling in classes.

Curriculum

Foundations

ASDS 5301	STATISTICAL THEORY AND APPLICATIONS	3
ASDS 5302	PRINCIPLE OF DATA SCIENCE	3
ASDS 5303	STATISTICAL AND SCIENTIFIC COMPUTING I	3
ASDS 6306	INTERNSHIP/CAPSTONE RESEARCH PROJECT	3

Mathematics Teaching Specialization

Select four from the following: 12

MATH 5336	CONCEPTS AND TECHNIQUES IN NUMBER THEORY
MATH 5337	CONCEPTS AND TECHNIQUES IN CALCULUS
MATH 5340	DISCRETE MATHEMATICS FOR PROBLEM SOLVING
MATH 5341	MODERN GEOMETRY
MATH 5342	CONCEPTS AND TECHNIQUES IN ALGEBRA
MATH 5344	MATHEMATICS-SPECIFIC TECHNOLOGIES
MATH 5345	HISTORICAL APPROACH TO REAL ANALYSIS
MATH 5346	CONCEPTS AND TECHNIQUES IN PROBLEM SOLVING

Data Science Electives

Select 6 hours from the following:

ASDS 5305	DEEP LEARNING AND ARTIFICIAL NEURAL NETWORKS
ASDS 6300	SPECIAL TOPICS
ASDS 6301	ADVANCE REGRESSION ANALYSIS
ASDS 6302	MACHINE LEARNING WITH APPLICATIONS
ASDS 6303	DATA MINING WITH INFORMATION VISUALIZATION
ASDS 6304	OPTIMIZATION AND BIG DATA ANALYTICS
ASDS 6305	STATISTICAL AND SCIENTIFIC COMPUTING II
ASDS 5100	INDEPENDENT STUDY

Total Hours
30

Advising Resources

UNDERGRADUATE AND GRADUATE ADVISING

Location:

Life Science Building Room 206A and 206B

Email:

data.advising@uta.edu

Phone:

817-272-1512

Web:

Speak to an advisor in the Division of Data Science or schedule an appointment. (<https://www.uta.edu/academics/schools-colleges/science/departments/division-data-science/advising/>)