

College of Science Updates

Data Science

MASTER OF SCIENCE IN APPLIED STATISTICS AND DATA SCIENCE

About This Program

The Master of Science in Applied Statistics and Data Science (MS ASDS) will train students in statistical methodologies, data science, big data analytics, and machine learning. A primary objective of the MS ASDS is to prepare students for work in industry through an emphasis on cutting-edge methods commonly used to solve real-life problems. The MS ASDS curriculum will focus on applied statistics and data science (contrasted with theoretical statistics) and is designed for hands-on experience through in-class learning and opportunities for research project internships in different settings. Students will increase their breadth of knowledge of statistical research, machine learning, and big data analytics, and will be proficient in various programming languages at a suitable level for data analysis. The MS ASDS program includes a 3-semester credit hour (SCH) capstone project or professional internship that will allow students to experience the entire process of analyzing a given problem starting with problem conception all the way to product delivery. The MS ASDS program is designed for students with a wide range of backgrounds, including STEM degrees and those with non-technical backgrounds such as business majors. The program can be completed in 18 months (full-time students may complete in 12 months).

Competencies

- Upon completion, students will be able to apply statistical methodologies to real-world data from diverse applications.
- Upon completion, students will be able to design experiments.
- Upon completion, students will be able to understand computational aspects of big data analytics.
- Upon completion, students will be able to apply machine-learning algorithms for various learning tasks.
- Upon completion, students will be able to work in a variety of disciplines.

Admissions Criteria

All applicants for the Applied Statistics and Data Science MS must meet UT Arlington's graduate admission requirements. 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.

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

Core Courses

ASDS 5301	STATISTICAL THEORY AND APPLICATIONS	3
ASDS 5302	PRINCIPLE OF DATA SCIENCE	3
ASDS 5303	STATISTICAL AND SCIENTIFIC COMPUTING I	3
ASDS 6301	ADVANCE REGRESSION ANALYSIS	3
ASDS 6302	MACHINE LEARNING WITH APPLICATIONS	3
ASDS 6303	DATA MINING WITH INFORMATION VISUALIZATION	3
ASDS 6306	INTERNSHIP/CAPSTONE RESEARCH PROJECT	3

Electives

Select three from:

ASDS 5304	APPLIED MULTIVARIATE STATISTICAL ANALYSIS	
ASDS 5305	DEEP LEARNING AND ARTIFICIAL NEURAL NETWORKS	
ASDS 5306	APPLIED TIME SERIES ANALYSIS IN DATA ANALYTICS	
ASDS 6304	OPTIMIZATION AND BIG DATA ANALYTICS	

BS IN DATA SCIENCE TO MS IN APPLIED STATISTICS AND DATA SCIENCE FAST TRACK

About This Program

The Bachelor of Science in Data Science to Master of Science in Applied Statistics and Data Science Fast Track program empowers academically gifted students to achieve their bachelor's degrees within the expected timeframe while concurrently making substantial progress in master's level studies. The guidelines outlined here form the foundation for establishing applicant selection criteria and degree requirements, with the primary goal of ensuring student success and maintaining the educational quality of both undergraduate and graduate degrees.

Once applicants have undergone screening and have been selected for participation in this program, they will embark on a challenging and thoughtfully curated selection of advanced undergraduate and graduate courses. These courses are structured to fulfill requirements for both their undergraduate and graduate degrees. The guidelines set an upper limit on the number of credit hours that can be applied to both the bachelor's and the master's degrees, ensuring that the total credit hours do not exceed the specified maximum. If accepted into the program, students can enroll in specific graduate courses that count toward their bachelor's and master's degrees.

Admissions Criteria

All applicants must complete 15 hours of prerequisite foundation coursework at UTA as specified by the College of Science and earn a minimum GPA of 3.5 in these courses.

Unconditional Admission

Students must be within 30 hours of graduation with an undergraduate data science degree from UTA.

Students must have completed at least 30 hours of study at UTA with a 3.3 GPA or better.

Students must have an overall GPA of at least 3.3 for all college courses (at all schools).

Students must have a GPA of at least 3.3 for all data science courses taken at UTA.

Provisional Admission

A student may receive provisional admission if, during the semester in which they submit their application, they are expected to complete any outstanding courses required to fulfill prerequisite requirements. Provisional admission will be upgraded to unconditional admission upon the satisfactory fulfillment of these outstanding requirements. Students who do not meet all requirements by the end of the semester in which they applied will be disqualified from the fast track program. Any credits earned prior to dismissal from the program will be allocated exclusively to the undergraduate degree, and none of the additional advantages of the fast track program will be applicable. Provisionally admitted students who are removed from the program may subsequently seek admission to graduate programs through the standard application process, which entails the payment of all requisite fees and compliance with the relevant admission criteria. Admission will not be automatic, as it will be contingent on the standard admission procedures of the program to which the application is submitted.

Application Procedures

Undergraduate students seeking admission to the fast track initiate the process by filling out a fast track application form, which is obtainable through their academic advisor. The academic program will inform the student of their acceptance into the program.

Undergraduate students in good standing within the fast track program may choose to pursue their master's degrees once they have fulfilled their undergraduate requirements. Following the census date of the student's final undergraduate semester, the academic program will forward the fast track application form to the graduate program. No additional fees, transcripts, or test scores will be necessary, and admission will be automatic with the approval of the program's advisor. The typical starting semester will be the following long semester immediately after the undergraduate graduation semester. However, students have the option to delay their starting date as specified below. Students who plan to pursue a master's degree in a program different from the one in which they participated as fast track students must apply as regular students. They will need to complete the full application process, pay all required fees, and meet all standard admission criteria. In such cases, admission will not be automatic and will be subject to the regular admission procedures outlined in the Graduate Catalog.

Good Standing

To remain in the program, students must uphold an overall GPA of at least 3.00 and attain grades of B or higher in all fast track-approved courses used to fulfill both undergraduate and graduate degree requisites. Additionally, students are required to enroll in all 3 graduate courses and earn grades of B or better in all such graduate courses completed before obtaining their bachelor's degree. If a student fails to meet these requirements, including the three mandatory graduate courses or satisfactory grades, they will be required to exit the program and subsequently apply as a regular graduate student after obtaining their bachelor's degree.

Course Enrollment Authorization

Each semester, students are required to secure approval from the advisor to register for graduate courses that will be applied toward degree requirements. The advisor will closely monitor the progress of students and provide guidance accordingly.

Progressing to the Graduate Degree

Upon successful completion of their undergraduate degree in good standing as a fast-track student, a graduate enrollment record will have been established for the student. In this case, the student is exempt from the usual graduate school admission process, including application fees and letter of reference requirements.

Eligible students can complete up to 9 credit hours of selected graduate coursework as undergraduates. Maintaining a GPA of 3.0 in each graduate course is necessary to continue taking graduate classes. Any Fast Track student who successfully completes up to 9 hours of graduate coursework with grades of B or higher will be granted automatic admission to graduate study. These students are exempt from submitting a standard graduate application and paying an application fee.

Graduating Fast track students are encouraged to consult with the MS ASDS Advisor to ensure a seamless transition.

Timeframe to Begin Graduate Studies

A student can take a leave of absence for one semester and a summer after receiving the undergraduate degree before starting as a graduate student. An application for graduate admission must be completed and approved before post-baccalaureate studies can begin. Students returning after longer delays will have to apply as regular students, completing a full application, paying all fees, and meeting all admission requirements outlined in the Graduate Catalog.

Taking a Break During Graduate Studies

Once a student transitions into graduate status, they are subject to the regulations applicable to all graduate students. While there is no mandated minimum course load, students have the option to take authorized breaks as outlined in the graduate catalog. However, it is essential to complete their master's degree within a six-year timeframe. For additional information, students are encouraged to seek guidance from the graduate advisor.

Total Graduate Courses

Prior to receiving their bachelor's degree, fast track students are expected to successfully finish three graduate courses, earning grades of B or higher. To fulfill the master's degree will require a minimum of seven additional courses.

Application for Enrollment in Graduate Courses as an Undergraduate

To enroll in graduate courses, students must secure the approval of the MS ASDS Advisor, which will be documented on a designated course registration form. The MS ASDS Graduate Advisor will evaluate the student's eligibility for the listed courses and verify that they align with the student's academic objectives for both their undergraduate and graduate degree programs.

Criteria for Program Continuation

- Students must maintain an overall GPA (combining graduate and undergraduate coursework) of at least 3.0.
- It is expected that students achieve grades of B or higher in their graduate courses. If a student receives a grade below B in a graduate course prior to completing their undergraduate degree, they will lose their eligibility to remain in the fast track program.
- To be eligible to continue in the fast track program, students must successfully
- complete three graduate courses with grades of B or higher before graduating with their bachelor's degree
- Throughout their entire undergraduate studies at UTA, which includes their fast track program, students are restricted from repeating more than three undergraduate courses, and they are not allowed to repeat any single course more than once. This regulation exclusively pertains to undergraduate courses, as graduate courses cannot be retaken.

Failure to fulfill these requirements at any point will result in the student's removal from the fact track program. Any graduate credits earned will only be applied toward the undergraduate degree, and none of the other program benefits will be applicable. Students who are dismissed from the fast track program will be eligible to apply for master's programs as regular applicants. These students will be required to pay the necessary application fee and meet all the admission requirements outlined in the Graduate Catalog.

Curriculum

Foundations

These courses are prerequisites for admission to the fast track.

DATA 3401	PYTHON FOR DATA SCIENCE 1	4
DATA 3402	PYTHON FOR DATA SCIENCE 2	4
DATA 3421	DATA MINING, MANAGEMENT, AND CURATION	4
DATA 3441	STATISTICAL METHODS FOR DATA SCIENCE 1	4

Graduate Courses Applied to both Degrees

ASDS 5301	STATISTICAL THEORY AND APPLICATIONS (Replaces DATA 3442)	3
ASDS 6302	MACHINE LEARNING WITH APPLICATIONS (Replaces DATA 3461)	3
ASDS 6306	INTERNSHIP/CAPSTONE RESEARCH PROJECT (Replaces DATA 4391)	3

Foundation courses are mandatory and must be successfully completed at UTA, with each course earning a grade of B or better and a GPA of 3.5 or higher. Students are not obligated to complete the program to obtain their bachelor's degrees and have the option to discontinue their participation at any point. The selection of graduate and undergraduate courses during their fast track program journey is designed to ensure that these courses can be applied to their bachelor's degree, even if students decide to leave the program before completing all available courses.