

Bachelor of Science in Data Science (Statistics)

About This Program

The Bachelor of Science in Data Science Statistics concentration enhances theoretical and computational skills by blending advanced statistical methods with algorithm design and machine learning. Students gain a deeper understanding of the statistical principles that underlie modern data analysis, artificial intelligence, and other computational applications. Beyond the UTA Core Curriculum requirements, the degree requires a sequence of courses in Mathematics, Statistics, and Data Science. In addition, students must complete a year-long Capstone project in collaboration with a supervisor within the College of Science or an Industry Partner.

Competencies

1. Upon completion, students will demonstrate knowledge of fundamentals of mathematics and statistics, in applications to data science.
2. Upon completion, students will demonstrate knowledge of computer programming through receiving a certificate, and therefore passing, a programming course.
3. Upon completion, students will demonstrate the ability to effectively work in teams to complete data science projects

Curriculum

Foundations

General Core Requirements (<https://catalog.uta.edu/academicregulations/degree requirements/generalcore requirements/>) 42

Students must complete specific courses in certain core areas.

For Communication select:

ENGL 1301 RHETORIC AND COMPOSITION I

An additional communication area course.

For Life & Physical Science select one of the following sequences:

BIOL 1441 & BIOL 1442 BIOLOGY I FOR SCIENCE MAJORS: CELL AND MOLECULAR BIOLOGY and BIOLOGY II FOR SCIENCE MAJORS: ECOLOGY AND EVOLUTION

CHEM 1441 & CHEM 1442 GENERAL CHEMISTRY I and GENERAL CHEMISTRY II

PHYS 1443 & PHYS 1444 GENERAL TECHNICAL PHYSICS I and GENERAL TECHNICAL PHYSICS II

GEOL 1301 & GEOL 1302 EARTH SYSTEMS and EARTH HISTORY

For Mathematics select:

MATH 1426 CALCULUS I

Data Science Foundations

UNIV 1131 STUDENT SUCCESS 1
or UNIV-SC 1101 CAREER PREPARATION AND STUDENT SUCCESS

Additional hours required in core. 2

MATH 2425 CALCULUS II

Data Science Specialization

DATA 3311 MATHEMATICS FOR DATA SCIENCE 3

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

DATA 3442 STATISTICAL METHODS FOR DATA SCIENCE 2 4

DATA 3461 MACHINE LEARNING 4

DATA 4380 DATA PROBLEMS 3

DATA 4381 DATA CAPSTONE PROJECT 1 3

DATA 4382 DATA CAPSTONE PROJECT 2 3

Statistics Specialization

MATH 2326 CALCULUS III 3

MATH 3302 MULTIVARIATE STATISTICAL METHODS 3

MATH 3313	INTRODUCTION TO PROBABILITY	3
MATH 4311	STOCHASTIC MODELS AND SIMULATION	3
or MATH 4312	ACTUARIAL RISK ANALYSIS	
MATH 4313	MATHEMATICAL STATISTICS	3
DATA 2301	DATA VISUALIZATION & DATA STORYTELLING	3
DATA 4350	INTRODUCTION TO TIME SERIES ANALYSIS	3
DATA 4351	REGRESSION ANALYSIS	3
Select any three of the following courses.		9
BIOL 3300	BIOSTATISTICS	
BIOL 3340	BIOINFORMATICS	
BSTAT 3321	INTERMEDIATE STATISTICS FOR BUSINESS ANALYTICS	
ENVR 3454	STATISTICS FOR EARTH AND ENVIRONMENTAL SCIENTISTS	
IE 3315	OPERATIONS RESEARCH I	
MATH 3300	INTRODUCTION TO PROOFS	
MATH 3345	NUMERICAL ANALYSIS AND COMPUTER APPLICATIONS	
PSYC 2300	STATISTICS IN PSYCHOLOGY	
Select a MATH or DATA course at 3000 level or higher.		
Additional MATH at 3000 level or above or DATA 2000 level or above courses sufficient to complete 120 hours		6

Total Hours**120****SUGGESTED COURSE SEQUENCE**

Details of a personal course sequence should be made with the guidance of the Data Science undergraduate advisor, particularly since many courses are not offered every semester. For all entering freshmen, it is important to begin the mathematics sequence, starting with MATH 1426, Calculus I, in the first semester.

First Year			
Fall Semester	Hours	Spring Semester	Hours
MATH 1426		4 ENGL 1301	3
DATA 3401		4 MATH 2425	4
UNIV 1131 or UNIV-SC 1101		1 DATA 3402	4
Component Area Option (Suggested DATA 1301)		3 Life & Physical Science Sequence	3-4
Life & Physical Science Sequence		3-4	
		15-16	14-15
Second Year			
Fall Semester	Hours	Spring Semester	Hours
Communication		3 Creative Arts	3
U.S. History (part 1)		3 U.S. History (part 2)	3
MATH 2326		3 Language, Philosophy, Culture	3
DATA 2301		3 DATA 3311	3
DATA 3421		4 DATA 3441	4
		16	16
Third Year			
Fall Semester	Hours	Spring Semester	Hours
MATH 3313		3 MATH 3302	3
DATA 3442		4 MATH 4311 or 4312	3
DATA 3461		4 MATH 4313	3
Government/Political Science		3 DATA 4380	3
		Government/Political Science	3
		14	15
Fourth Year			
Fall Semester	Hours	Spring Semester	Hours
Social & Behavioral		3 DATA 4382	3
Approved Elective		3 MATH or DATA Elective	3
DATA 4350		3 MATH or DATA Elective	3
DATA 4351		3 Approved Elective	3

DATA 4381	3 Approved Elective	3
	15	15

Total Hours: 120-122

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/>)