Bachelor of Science in Data Science (Environtmental Science)

About This Program

The Bachelor of Science in Data Science Environmental Science concentration focuses on analyzing environmental data related to climate, pollution, land use, and natural resources. Students learn to apply computational tools to datasets from satellite observations, fieldwork, environmental models, and similar sources. Beyond the UTA Core Curriculum requirements, the degree requires a sequence of courses in Mathematics, Data Science, and Environmental 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/degreerequirements/generalcorerequirements/)		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:		
CHEM 1441	GENERAL CHEMISTRY I	
CHEM 1442	GENERAL CHEMISTRY II	
For Mathematics select:		
MATH 1426	CALCULUS I	
MATH 2425	CALCULUS II	
Data Science Foundations		
Additional hours required in core.		4
UNIV 1131	STUDENT SUCCESS	1
or UNIV-SC 1101	CAREER PREPARATION AND STUDENT SUCCESS	
Data Science Specialization		
DATA 3401	PYTHON FOR DATA SCIENCE 1	4
DATA 3402	PYTHON FOR DATA SCIENCE 2	4
DATA 3311	MATHEMATICS FOR DATA SCIENCE	3
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
Environmental Science Specialization		
BIOL 1441	BIOLOGY I FOR SCIENCE MAJORS: CELL AND MOLECULAR BIOLOGY	4
ENVR 1301	INTRODUCTION TO ENVIRONMENTAL SCIENCE	3
ENVR 1330	GLOBAL WARMING	3
ENVR 3454	STATISTICS FOR EARTH AND ENVIRONMENTAL SCIENTISTS	4
ENVR 4455	ENVIRONMENTAL DATA SCIENCE	4
GEOL 4330	UNDERSTANDING GEOGRAPHIC INFORMATION SYSTEMS	3

GEOL 4405	METEOROLOGY AND CLIMATOLOGY	4
or GEOL 4456	ENVIRONMENTAL RISK ASSESSMENT	
ENVR 4303	TOPICS IN SUSTAINABILITY	3
or GEOL 4331	ANALYSIS OF SPATIAL DATA	
Select two GEOL or ENVR courses numbered 3300 or higher.		6
Select one GEOL or ENVR course numbered 3300 or higher or DATA course numbered 2300 or higher.		3
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
UNIV-SC 1101 or 1131	1	CHEM 1442	4
Component Area Course (Suggested DATA 1301)	3	MATH 2425	4
CHEM 1441	4	DATA 3311	3
MATH 1426	4	DATA 3402	4
DATA 3401	4		
	16		**15**

Second Year

Fall Semester	Hours	Spring Semester	Hours
BIOL 1441	4	Approved Creative Arts Core	3
ENVR 3454	4	ENVR 1330	3
ENGL 1301	3	DATA 3442	4
DATA 3441	4	DATA 3421	4
	15		**14**

Third Year

Fall Semester	Hours	Spring Semester	Hours
ENVR 4455	4	ELECTIVE (GEOL or ENVR 33xx+)	3
HIST 1301	3	ENVR 1301	3
GEOL 4405 or 4456	4	GEOL 4330	3
DATA 3461	4	DATA 4380	3
		HIST 1302	3
	15		**15**

Fourth Year

Fall Semester	Hours	Spring Semester	Hours
Approved Communication Core	3	Approved Social & Behavioral Core	3
ENVR 4303 or GEOL 4331	3	POLS 2312	3
DATA 4381	3	ELECTIVE (GEOL or ENVR 33xx+)	3
POLS 2311	3	ELECTIVE (GEOL or ENVR 33xx+ or DATA 23xx+)	3
Approved Language, Philosophy Culture Core	3	DATA 4382	3
	15		**15**

Total Hours: 120

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/)