Bachelor of Science in Data Science (Biology)

About This Program

In the Bachelor of Science in Data Science Biology concentration, students integrate biological knowledge with data science methods to analyze biological systems, genomic data, and ecological patterns. This combination prepares students for roles that require managing and interpreting biological data in research, healthcare, environmental fields, and beyond. Beyond the UTA Core Curriculum requirements, the degree requires a sequence of courses in Mathematics, Data Science, and Biology. 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 are required to 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:		
BIOL 1441	BIOLOGY I FOR SCIENCE MAJORS: CELL AND MOLECULAR BIOLOGY	
BIOL 1442	BIOLOGY II FOR SCIENCE MAJORS: ECOLOGY AND EVOLUTION	
For Mathematics select:		
MATH 1421	PREPARATION FOR CALCULUS	
MATH 1426	CALCULUS I	
Data Science Foundations		
Additional hours required in core.		4
UNIV 1131	STUDENT SUCCESS	1
or UNIV-SC 1101	CAREER PREPARATION AND STUDENT SUCCESS	
Select any course numbered 3300 or higher.		3
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
Biology Specialization		
CHEM 1441	GENERAL CHEMISTRY I	4
CHEM 1442	GENERAL CHEMISTRY II	4
CHEM 2321	ORGANIC CHEMISTRY I	3
CHEM 2181	ORGANIC CHEMISTRY I LABORATORY	1
BIOL 3315	GENETICS	3
BIOL 3340	BIOINFORMATICS	3
Select 3 BIOL courses number 3300 or higher.		9

Select 1 BIOL course numbered 3400 or higher.	4
Select one BIOL 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 1421, Preparation for Calculus, in the first semester.

First Year

Fall Semester	Hours	Spring Semester	Hours
UNIV 1131 or UNIV-SC 1101	1	DATA 3401	4
ENGL 1301	3	DATA 3311	3
BIOL 1441	4	MATH 1426	4
MATH 1421	4	BIOL 1442	4
Component Area Course (Suggested DATA 1301)	3		
	15		**15**

Second Year

Fall Semester	Hours	Spring Semester	Hours
DATA 3402	4	DATA 3421	4
BIOL 3315	3	ELECTIVE (BIOL 33xx+)	3
ELECTIVE (33xx+)	3	ELECTIVE (BIOL 33xx+)	3
Approved Communication Core	3	ELECTIVE (BIOL 33xx+)	3
Approved Language, Philosophy, Culture Core	3	Approved Creative Arts Core	3
	16		**16**

Third Year

Fall Semester	Hours	Spring Semester	Hours
DATA 3441	4	DATA 3442	4
DATA 3461	4	DATA 4380	3
CHEM 1441	4	CHEM 1442	4
HIST 1301	3	HIST 1302	3
	15		**14**

Fourth Year

Fall Semester	Hours	Spring Semester	Hours
DATA 4381	3	DATA 4382	3
BIOL 3340	3	ELECTIVE (BIOL 34xx+)	4
CHEM 2321	3	ELECTIVE (BIOL 33xx+ or DATA 23xx+)	3
CHEM 2181	1	Approved Social & Behavioral Core	3
POLS 2311	3	POLS 2312	3
	13		**16**

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/)