Bachelor of Science in Data Science (Biochemistry)

About This Program

In the Bachelor of Science in Data Science Biochemistry concentration, students apply data science to molecular and biochemical data, learning to process complex datasets such as protein structures, metabolic pathways, and laboratory results. This training supports careers in pharmaceutical research, biotechnology, biomedical data analysis, and related fields. Beyond the UTA Core Curriculum requirements, the degree requires a sequence of courses in Mathematics, Data Science, and Biochemistry. 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 and 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 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	
Select any course numbered 3400 or higher.		4
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
Biochemistry 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
CHEM 2322	ORGANIC CHEMISTRY II	3
CHEM 2182	ORGANIC CHEMISTRY II LABORATORY	1
CHEM 2335	QUANTITATIVE CHEMISTRY	3

CHEM 2285	QUANTITATIVE CHEMISTRY LABORATORY	2
CHEM 3317	INORGANIC CHEMISTRY	3
or CHEM 4318	INORGANIC CHEMISTRY	
CHEM 4311	BIOCHEMISTRY I	3
Select 2 CHEM courses numbered 3300 or higher or DATA courses numbered 2300 or higher.		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
Component Area Course (Suggested DATA 1301)	3	CHEM 1442	4
UNIV 1131 or UNIV-SC 1101	1	MATH 2425	4
CHEM 1441	4	DATA 3402	4
MATH 1426	4	DATA 3311	3
DATA 3401	4		
	16		**15**

Second Year

Fall Semester	Hours	Spring Semester	Hours
CHEM 2321	3	CHEM 2322	3
CHEM 2181	1	CHEM 2182	1
DATA 3441	4	DATA 3421	4
Elective (34xx+)	4	DATA 3442	4
ENGL 1301	3	Approved Communication Core	3
	15		**15**

Third Year

Fall Semester	Hours	Spring Semester	Hours
CHEM 2335	3	DATA 4380	3
CHEM 2285	2	CHEM 4311	3
DATA 3461	4	CHEM 3317 or 4318	3
HIST 1301	3	Approved Social and Behavioral Core	3
Approved Creative Arts Core	3	POLS 2312	3
	15		**15**

Fourth Year

Fall Semester	Hours	Spring Semester	Hours
DATA 4381	3	DATA 4382	3
BIOL 1441	4	BIOL 1442	4
HIST 1302 or 1332	3	Elective (CHEM 33xx+ or DATA 23xx+)	3
Approved Language, Philosophy, Culture Core	3	Elective (CHEM 33xx+ or DATA 23xx+)	3
POLS 2311	3		
	16		**13**

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/)