

DATA SCIENCE, BS

Department & Program Chair: Chris Bopp, Ph.D.

Faculty

C. Bopp, Ph.D.
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The Data Science major prepares students for entry-level data analyst positions in traditional and interdisciplinary domains. This program also prepare students for advanced study at the graduate level.

The department follows the ACM (Association for Computing Machinery) guidelines for undergraduate education.

The department maintains three computer labs to support the curriculum. The Software Development Laboratory supports the first three courses in the major sequence and several upper-division courses. The Network/Systems Administration lab supports a variety of introductory and advanced networking and server management courses. The Cybersecurity Lab offers workstations for conducting advanced security assessments. Finally, a virtual lab environment allows students to gain hands-on experience with virtual servers, giving them the ability to configure and deploy new services.

Together, the department faculty has published numerous articles and textbooks. With the addition of practicing professionals, the program faculty provides breadth and depth in the foundational - as well as emerging areas - of computing. Students often participate in research projects with faculty supervision, occasionally co-authoring papers with faculty members.

Code	Title	Credits
Data Science		
<i>Data Science courses:</i>		17
DS-107	INTRO TO DATA & DATA ANALYTICS	
DS-201 & DSL-201	DATA SCIENCE TOOLKIT and DATA SCIENCE TOOLKIT LAB	
DS-301 & DSL-301	EMERGING TRENDS IN DATA SCIENCE and EMERGING TRENDS IN DATA SCIENCE LAB	
DS-351	DATA SCIENCE CASE STUDIES	
DS-401	SENIOR COMPREHENSIVE PROJECT I	
DS-402	SENIOR COMPREHENSIVE PROJECT II	
<i>Computer Science courses:</i>		24
CS-130 & CSL-130	INTRODUCTION TO PROGRAMMING IN PYTHON and INTRO TO PROGRAMMING IN PYTHON LAB	
CS-131 & CSL-131	OBJECT ORIENTED PROGRAMMING and OBJECT ORIENTED PROGRAMMING LAB	
CS-132 & CSL-132	ALGORITHMS & DATA STRUCTURES and ALGORITHMS & DATA STRUCTURES LAB	
CS-243 & CSL-243	DATABASE AND BIG DATA and DATABASE AND BIG DATA LAB	
CS-257 & CSL-257	USER EXPERIENCE DESIGN and USER EXPERIENCE DESIGN LAB	
CS-258 & CSL-258	MACHINE LEARNING and MACHINE LEARNING LAB	
<i>Mathematics courses:</i>		12

MATH-151	CALCULUS I	
MATH-207	DISCRETE MATHEMATICS I	
MATH-208	DISCRETE MATHEMATICS II	
MATH-241	LINEAR ALGEBRA	
<i>DS Electives from below options:</i>		9-10
MATH-152	CALCULUS II	
MATH-251	CALCULUS III	
CYB-101	INTRODUCTION TO INFORMATION SECURITY	
CS-241	COMPUTERS, SOCIETY & ETHICS	
CS-244 & CSL-244	WEB DEVELOPMENT and WEB DEVELOPMENT LAB	
QMX-212	STATISTICAL APPS FOR BUSINESS	
FIN-312	ECONOMETRICS FOR FINANCE	
<i>Data Science Subject Electives ¹</i>		9
General Education Requirements (https://catalog.sbu.edu/undergraduate/degree-requirements/)		37
Foreign Language ²		
General Electives (enough to reach 120 credits)		12
Total Credits		120-121

¹ Students must propose their own three course sequence, and it must be approved by their advisor.

² The foreign language must be at the level of 202 or higher. Students not prepared to begin at this level will need to take additional courses in language.

First Year			
Fall	Credits	Spring	Credits
DS-107		3 CS-131 & CSL-131	4
CS-130 & CSL-130	4	MATH-207	3
ENG-101		3 ENG-102	3
BONA-101		3 THFS-101	3
Foreign Language Requirement		3 Foreign Language Requirement	3
	16		16
Second Year			
Fall	Credits	Spring	Credits
MATH-151		3 MATH-241	3
MATH-208		3 CS-243 & CSL-243	4
CS-132 & CSL-132		4 CS-257 & CSL-257	4
PHIL-104		3 History Distribution Course	3
		DS Subject Elective	3
	13		17
Third Year			
Fall	Credits	Spring	Credits
DS-201 & DSL-201		4 DS-301 & DSL-301	4
CS-258 & CSL-258		4 DS-351	3
DS Subject Elective		3 DS Subject Elective	3
Natural Science Distribution		4 Literature Distribution Course	3
		Theology Distribution	3
	15		16
Fourth Year			
Fall	Credits	Spring	Credits
DS-401		2 DS-402	1

DS Elective Course	3-4 DS Elective Courses	6
General Electives	6 Social Science Distribution	3
Philosophy Distribution	3 General Electives	3
14-15		13

Total Credits 120-121

Changes in the sequence of the program listed above may be desirable.
These must be made in consultation with the student's academic adviser.