Data Science, BS

Requirements

The Bachelor of Science with a major in data science requires a minimum of 120 s.h., including at least 64 s.h. of work for the major. Students must maintain a grade-point average of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences GE CLAS Core.

Data science majors may not earn a major or minor in computer science or statistics, a major in computer science and engineering, or the Certificate in Social Science Analytics.

The BS with a major in data science requires the following coursework.

Requirements	Hours
Prerequisite Courses	16
Core Courses	36
Advanced Electives	9
Capstone Course	3

Prerequisite Courses

Course #	Title	Hours
MATH:1850	Calculus I	4
MATH:1860	Calculus II	4
MATH:2700	Introduction to Linear Algebra	4
MATH:2850	Calculus III	4

Core Courses

Course #	Title	Hours
All of these:		
DATA:3200/ IGPI:3200/ISE:3760/ STAT:3200	Applied Linear Regression	3
DATA:4580/ IGPI:4580/ STAT:4580	Data Visualization and Data Technologies	3
CS:1210	Computer Science I: Fundamentals	4
CS:2210	Discrete Structures	3
CS:2230	Computer Science II: Data Structures	4
CS:3330	Algorithms	3
CS:4400	Database Systems	3
STAT:2010	Statistical Methods and Computing	3
STAT:3100/ IGPI:3100	Introduction to Mathematical Statistics I	4
STAT:3101/ IGPI:3101	Introduction to Mathematical Statistics II	3
One of these:		
DATA:4540/ BAIS:4540/ IGPI:4540/ STAT:4540	Statistical Learning	3
CS:5430	Machine Learning	3

Advanced Electives

Course #	Title	Hours
9 s.h. from these, with at least one computer science course (prefix CS) and one statistics course (prefix STAT):		
DATA:4600/ STAT:4600	Causal Inference for Data Science	3
DATA:4610	Data Acquisition and Management	3
DATA:4620	Text Data Analysis	3
DATA:4750/ STAT:4750	Probabilistic Statistical Learning	3
DATA:4880	Data Science Creative Component	1
DATA:6200/ ACTS:6200/ STAT:6200	Predictive Analytics	3
BIOS:4510	Data Science Foundations in R	2
CS:4420	Artificial Intelligence	3
CS:4440	Web Mining	3
CS:4470	Health Data Analytics	3
CS:4510	Human-Computer Interaction for Computer Science	3
CS:4630	Mobile Computing	3
CS:4700/ MATH:4860	High Performance and Parallel Computing	3
CS:5630	Cloud Computing Technology	3
MATH:4840	Mathematics of Machine Learning	3
STAT:3210	Experimental Design and Analysis	3
STAT:4520/ IGPI:4522/ PSQF:4520	Bayesian Statistics	3
STAT:4560	Statistics for Risk Modeling I	3
Other advanced computer science or statistics courses approved by advisor		

Capstone Course

Course #	Title	Hours
DATA:4890	Data Science Practicum	3

The Department of Statistics and Actuarial Science and the Department of Computer Science collaborate to offer the major in data science.