DATA SCIENCE MINOR

Department: Computer Science and Information Systems (https://catalog.bradley.edu/undergraduate/liberal-arts-sciences/computer-science-information-systems/)

The Data Science minor provides students with the necessary skills to effectively use large data sets to solve problems and potentially find new insights. The minor is composed of courses covering the knowledge discovery process, i.e., students learn techniques on how to collect and understand data and its properties, such as quality and completeness, prepare data for analysis, and analyze data using models (specific machine learning and data mining algorithms or techniques) and visualize solutions. This minor, and the field of Data Science, is the confluence of several related computer science sub-disciplines, including Artificial Intelligence, Machine Learning, Databases and Information Retrieval, Statistics, and Operations Research.

The minor is comprised of 25 to 26 semester hours of study as outlined below.

Code	Title	Hours
Required Courses		
CS 101	Introduction to Programming (or equivalent)	4.0
CS 102	Data Structures	3.0
Select one of the following: (or equivalent)		3.0
MTH 111	Elementary Statistics	
MTH 325	Probability and Statistics I	
Q M 262	Quantitative Analysis I	
PSY 205	Quantitative Methods	
ECE 302	Probability, Statistics, and Random Processes for EE	
IME 311	Introduction to Engineering Statistical Methods	
ENC 310		
BIO 260 & BIO 261	Biological Statistics I and Biological Statistics II (or equivalent)	
Select one of the following:		3.0-4.0
MTH 120	Discrete Mathematics (or equivalent)	
MTH 115	Brief Calculus With Applications I	
or MTH 121	Calculus I	
CS 360	Fundamentals of Data Science	3.0
Electives		
Select three courses at the 300 level or above from a pool of Data Science related courses approved by the department, including:		9.0
CS 461	Artificial Intelligence	
CS 462	Machine Learning	
CS 463	Knowledge Discovery and Data Mining	
CS 370	Database Management Systems	
CS 472	Distributed Databases and Big Data	
CIS 476	Data Management	
Total Hours		**25-26**