

Data Science Certificate

Data Science is the study of methods to manage, analyze and extract knowledge from data. Industry and government need an educated workforce with the necessary expertise to make use of the enormous volumes of data available to them. Due to their extensive expertise and facilities, the departments of Mathematical Sciences and Computer and Electrical Engineering and Computer Science have jointly designed the Data Science certificate. This 15-credit certificate program has two tracks: Mathematical Sciences (MathSci) and Computer Science (CS). The Data Science certificate draws the 15 credits from Computer Science, Mathematics and Statistics.

Admission

The program is open to students who satisfy the prerequisite courses required for each course in the certificate curriculum. Both tracks - MathSci and CS - require two core courses and three elective courses for a total of 15 credits. All five courses must be completed with a grade of "C" or better.

Core Courses - 6 credits		
RI: Introduction to Data Science	CAP 3786	3 or
Introduction to Data Science and Analytics	CAP 4773	3 or
<u>Introduction to Data Science</u>	<u>CAP 5768</u>	<u>3</u>
Probability and Statistics for Engineers	STA 4032	3 or
Probability and Statistics 1	STA 4442	3 or
Stochastic Models for Computer Science	STA 4821	3
Elective Courses by Track - 9 credits		
<i>MathSci Track - Select two from the following courses and one more from this list or the list of CS elective courses. *Recommended electives.</i>		
RI: Computational Statistics	STA 4102	3
Statistical Designs	STA 4222	3
RI: Statistical Learning *	STA 4241	3
Applied Statistics 1	STA 4234	2
Applied Statistics 1 Lab	STA 4202L	1
Applied Statistics 2 *	STA 4702	3
Applied Time Series and Forecasting	STA 4853	3
<i>CS Track - Select two from the following courses and one more from this list or the list of MathSci elective courses.</i>		
Introduction to Deep Learning	CAP 4613	3
Introduction to Artificial Intelligence	CAP 4630	3
Introduction to Data Mining and Machine Intelligence	CAP 4770	3
Introduction to Computer Systems Performance Evaluation	CEN 4400	3
Introduction to Database Structures	COP 3540	3
Applied Database Systems	COP 4703	3