

DATA SCIENCE B.S.

DATA SCIENCE MAJOR

The study and applications of Data Science impacts our lives in myriad ways every moment of every day. Often we are unaware of the role this important field plays in our daily routines. We have data scientists to thank as we read the latest news on our social media feed of choice, or watch a movie suggested by our go-to streaming app. Even the food we eat has likely been guided by the study of big data. For example, researchers are working hand-in-hand with farms of all sizes to help analyze data which in turn can identify and reduce areas of inefficiency and waste, and bring food to your table in a faster, safer, and more cost-effective way.

The curriculum of the Bachelor of Science with a major in Data Science combines courses from the disciplines of Statistics, Mathematics, and Computer Science to prepare students for careers in Big Data Science & Analytics: rapidly growing fields with huge unmet demand. The unique interdisciplinary educational experience allows students the opportunity to acquire the broad base of knowledge and skills that employers are seeking.

REGULATIONS

Students pursuing the Bachelor of Science degree with a major in Data Science are subject to the Academic Standards in CEMS outlined in this catalogue.

REQUIREMENTS

THE CURRICULUM FOR THE B.S. IN DATA SCIENCE

All students must meet the Degree and University Requirements.

All students must meet the Catamount Core Curriculum Requirements.

All students must meet the College Requirements.

A minimum of 120 credits is required. Students are required to complete a minimum of 3 cr. Professional Development Electives that are listed on the College Requirements page.

CORE (11-18 CREDITS):		
CEMS 1500	CEMS First Year Seminar	1
CS 2870	Basics of Data Science	3
or STAT 2870	Basics of Data Science	
CS 3540	Machine Learning	3
or CS 3880	Statistical Learning	
or STAT 3880	Statistical Learning	
CS 3870	Data Science I - Pinnacle	3
or STAT 3870	Data Science I - Pinnacle	

STAT 4810	Capstone Experience	3
or STAT 3996	Undergrad Honors Thesis	
or MATH 4996	Undergraduate Honors Thesis	
or CS 4996	Undergraduate Honors Thesis	
COMPUTER SCIENCE CORE (23 CREDITS):		
CS 1210	Computer Programming I	3
CS 1640	Discrete Structures	3
CS 2100	Intermediate Programming	4
CS 2240	Data Struc & Algorithms	3
CS 2500	Intro to Database Systems	3
CS 3240	Algorithm Design & Analysis	3
CS 3920	Senior Seminar	1
2000-Level (or above) CS Elective		3
STATISTICS CORE (15 CREDITS):		
STAT 1410	Basic Statistical Methods 1	3
or STAT 2430	Statistics for Engineering	
STAT 2510	Applied Probability	3
or STAT 5510	Probability Theory	
STAT 2830	Basic Statistical Methods 2	3
STAT 3010	Stat Computing&Data Anlysis	3
STAT 3210	Advanced Statistical Methods	3
MATHEMATICS CORE (11 CREDITS):		
MATH 1234	Calculus I	4
MATH 1248	Calculus II	4
MATH 2522	Applied Linear Algebra	3
or MATH 2544	Linear Algebra	
Choose 12 Credits in Data Science (DS) electives selected from courses in MATH/STAT/CS/CSYS numbered 2000 or higher, with at least 9 of these credits in courses numbered 3000 or above.		12

GRADUATE

Complex Systems and Data Science AMP

Complex Systems and Data Science M.S.

Complex Systems and Data Science Ph.D.

See the online Graduate Catalogue for more information