

B.S. in Data Science (Statistics concentration)

(120 credits)

First Year

1st Semester		Credits
CS 100	Roadmap to Computing	3
MATH 111	Calculus I	4
PHYS 111	Physics I ¹	3
PHYS 111A	Physics I Lab ¹	1
HUM 101	English Composition: Writing, Speaking, Thinking I	3
FRSH SEM	First-Year Seminar	0
Term Credits		14

2nd Semester

CS 113	Introduction to Computer Science	3
MATH 112	Calculus II	4
PHYS 121	Physics II ¹	3
PHYS 121A	Physics II Lab ¹	1
HUM 102	English Composition: Writing, Speaking, Thinking II	3
Term Credits		14

Second Year

1st Semester		Credits
CS 114	Introduction to Computer Science II	3
MATH 244	Introduction to Probability Theory	3
MATH 337	Linear Algebra	3
History and Humanities GER 200 level		3
Social Sciences GER		3
Term Credits		15

2nd Semester

CS 241	Foundations of Computer Science I	3
CS 280	Programming Language Concepts	3
MATH 213	Calculus III B	4
MATH 341	Statistical Methods II	3
Data Science Elective 1		3
Term Credits		16

Third Year

1st Semester		Credits
MATH 340	Applied Numerical Methods	3
MATH 344	Regression Analysis	3
MATH 391	Numerical Linear Algebra	3
CS 301	Introduction to Data Science	3
History and Humanities GER 300+ level		3
Term Credits		15

2nd Semester

MATH 345	Multivariate Distributions	3
MATH 447	Applied Time Series Analysis	3
MATH 478	Stat Methods in Data Sci	3
Data Science Elective 2		3
History and Humanities GER 300+ level		3
Term Credits		15

Fourth Year

1st Semester

MATH 448	Stochastic Simulation	3
MATH 461	Introduction to Statistical Computing with SAS and R	3
MATH 462	Statistics and Statistical Learning Capstone 1	3
CS 450	Data Visualization	3
Data Science Elective 3		3
	Term Credits	15

2nd Semester

MATH 463	Statistics and Statistical Learning Capstone 2	3
Math Upper Level Elective (300+ level)		3
Humanities and Social Science Senior Seminar GER		3
Data Science Elective 4		3
Free Elective ²		4
	Term Credits	16
	Total Credits	120

Credits

Code Title

Data Science (Statistics Concentration) Electives

CS 310	Co-op Work Experience I	3
CS 331	Database System Design & Mgmt	3
CS 332	Principles of Operating Systems	3
CS 350	Intro to Computer Systems	3
CS 351	Introduction to Cybersecurity	3
CS 356	Introduction to Computer Networks	3
CS 357	Fundamentals of Network Security	3
CS 370	Introduction to Artificial Intelligence	3
CS 375	Machine Learning	3
CS 444	Big Data Systems	3
CS 408	Cryptography and Internet Security	3
CS 435	Advanced Data Structures and Algorithm Design	3
CS 482	Data Mining	3
MGMT 316	Business Research Methods	3
MGMT 416	Artificial Intelligence for Business Decisions	3
MRKT 378	Marketing Analytics	3
MRKT 430	Marketing Research	3
MATH 222	Differential Equations	4
MATH 388	Introduction to Chaos Theory	3
MATH 430	Analytical and Computational Neuroscience	3
MATH 453	High-Performance Numerical Computing	3
MATH 477	Stochastic Processes	3
IS 333	Social Network Analysis	3
IS 392	Web Mining and Information Retrieval	3
FIN 218	Financial Markets and Institutions	3
FIN 306	Blockchain Technology for Business	3
FIN 310	Data-Driven Financial Modeling	3
FIN 320	Fin Data Analytics	3
IT 430	Ethical Hacking for System Administrators	3
IT 485	Special Topics in Information Technology I	3

¹ Students considering switching to Computer Science or Mathematical Sciences should take PHYS 111/111A and 121/121A. Do not take PHYS 102/102A

² Free electives should be chosen in consultation with the advisor. Some restrictions apply.