

# Data Science Bachelor of Science

This 120-credit B.S. in Data Science at Montana State University includes coursework from Computer Science, Statistics, Mathematics, Business, English and the MSU Library. Data Science is an interdisciplinary field that extracts knowledge and insights from diverse data. The major is administered by MSU's School of Computing in close collaboration with the Department of Mathematical Sciences.

Freshman Year	Credits	
	Fall	Spring
CSCI 127 - Joy and Beauty of Data	4	
M 171Q - Calculus I	4	
WRIT 101W - College Writing I	3	
University Core (IS or RS)	3	
CSCI 132 - Basic Data Structures and Algorithms		4
M 172 - Calculus II		4
University Core (IN or RN)		3
University Core (US)		3
Year Total:	14	14
Sophomore Year	Credits	
	Fall	Spring
BMIS 211 - Data Analytics I	3	
CSCI 232 - Data Structures and Algorithms	4	
M 273 - Multivariable Calculus	4	
STAT 216Q - Introduction to Statistics	3	
WRIT 221 - Intermediate Tech Writing	3	
BMIS 311 - Management Information Systems		3
CSCI 246 - Discrete Structures		3
M 221 - Introduction to Linear Algebra		3
University Core (CS)		3
STAT 337 - Intermediate Statistics with Introduction to Statistical Computing		3
Year Total:	17	15
Junior Year	Credits	
	Fall	Spring
CSCI 440 - Database Systems	3	
STAT 411 - Methods for Data Analysis I	3	
Data Science Elective	3	
University Core (D)	3	
Free Elective	3	
CSCI 347 - Data Mining		3
LSCI 470 - Ethics and Privacy in the Age of Big Data		3
STAT 412 - Methods for Data Analysis II		3
Data Science Elective		3
Free Elective		3
Year Total:	15	15
Senior Year	Credits	
	Fall	Spring
CSCI 447 - Machine Learning	3	
Data Science Elective	3	
University Core (IH or RH)	3	
Free Elective	3	

Free Elective	3	
Data Science Capstone (to be developed)		3
Data Science Elective		3
University Core (IA or RA)		3
Free Elective		3
Free Elective		3
Year Total:	15	15
<b>Total Program Credits:</b>		<b>120</b>

A minimum of 120 credits is required for graduation; 42 of these credits must be in courses numbered 300 and above. Note: The BMIS prerequisite of ACTG 201 will be waived for Data Science majors.

## Data Science Electives

BMGT 405	Supply Chain Analytics	3
BMGT 475R	Management Research Experience	3
CSCI 432	Advanced Algorithm Topics	3
CSCI 446	Artificial Intelligence	3
CSCI 451	Computational Biology	3
ECNS 403R	Intro to Econometrics	3
EFIN 301	Engineering & Economic Financial Management I	3
EFIN 305	R Lab for Financial Engineering I	1
EFIN 401	Engineering & Economic Financial Management II	3
EFIN 405	R Lab Class II	1
ESOF 322	Software Engineering	3
LSCI 342	Data Curation for a Data-Driven World	3
LSCI 437	Social Media Practices	3
M 274	Introduction to Differential Equation	4
M 348	Techniques of Applied Math I	3
M 349	Techniques of Applied Mathematics II	3
M 386R	Software Applications in Mathematics	3
M 430	Mathematical Biology	3
M 441	Numerical Linear Algebra & Optimization	3
M 442	Numerical Solution of Differential Equations	3
STAT 408	Statistical Computing and Graphical Analysis	3
STAT 425	Biostatistical Data Analysis	3
STAT 439	Introduction to Categorical Data Analysis	3
STAT 441	Experimental Design	3
STAT 446	Sampling	3
Other upper division data intensive courses, if pre-approved, can be used		