



Bachelor of Science in Data Science - Statistical Modeling

The interdisciplinary Bachelor of Science in Data Science at MSU goes beyond data analytics and embraces a vision in which data become the power behind the digital transformation of every field of human endeavor. The concentration in Statistical Modeling focuses on statistical models and methods that are needed to discover, validate, and predict patterns using Big Data. Students completing the concentration will be able to apply the theoretical machinery of quantitative methods to real-world problems in many fields.

Freshman Year

Fall Semester		Spring Semester			
EN 1103	English Composition I	3	EN 1113	English Composition II	3
MA 1713	Calculus I	3	MA 1723	Calculus II	3
DSCI 2013	Data Science Literacy	3	PHI 1113	Intro to Logic	3
— —	Natural Science 1 + Lab	3	— —	Natural Science 2 + Lab	3
— —	Fine Arts	3	CSE 1284	Introduction to Programming	4

Sophomore Year

Fall Semester		Spring Semester			
— —	Social Science	3	MA/ST 3123	Statistical Inference	3
MA 2733	Calculus III	3	MA 3113	Intro to Linear Algebra	3
DSCI 3013	Fundamentals of Data Acquisition	3	BIS 3233	Management Information Systems	3
DSCI 2012	Lab - Data Wrangling	2	DSCI 4013	Data Visualization	3
CSE 1384	Intermediate Programming	4	CSE 2383	Data Structures and Analysis of Algorithms	3

Junior Year

Fall Semester		Spring Semester			
CSE 2813	Discrete Structures	3	CSE 3763	Legal & Ethical Issues Computing	3
DSCI 3012	Lab - Desc., Analysis, Inference	2	CO 1003	Fundamentals of Public Speaking	3
DSCI 3022	Lab - Data Visualization	2	DSCI 3032	Lab - Artificial Intelligence	2
MA 2923	Intro. To Modern Scientific Computing	3	CSE 4503	Database Management Systems	3
CSE 4633	Artificial Intelligence	3	MA 4183	Math. Found. Of Machine Learning	3
— —	Humanities	3	DSCI 2022	Lab - Cloud, Quantum, HPC	2

Senior Year

Fall Semester		Spring Semester			
MGT 3213	Organizational Communication	3	MA/ST 4523	Intro to Probability	3
MA 4133	Discrete Mathematics	3	MA/ST 4143	Graph Theory	3
ST 4243	Data Analysis I	3	ST 4313	Intro to Spatial Statistics	3
ST 4543	Intro to Mathematical Statistics I	3	ST 4213	Nonparametric	3
DSCI 4553	Capstone 1	3	DSCI 4663	Capstone 2	3