Bachelor of Science in Data Science - Geoinformatics

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 Geoinformatics prepares students to perform statistical analysis of geospatial data, use Geographic Information Systems (GIS), and acquire spatial information from remote sensing platforms. Students will be prepared for careers in sciences like meteorology, climatology, geospatial science, or geology.

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 Agorithms	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
GR 4303	Principles of GIS	3	CSE 4503	Database Management Systems	3
CSE 4633	Artificial Intelligence	3	GR 4633	Statistical Climatology	3
___ ___	Humanities	3	DSCI 2022	Lab - Cloud, Quantum, HPC	2

Senior Year

Fall Semester			Spring Semester		
MGT 3213	Organizational Communiation	3	MA/ST 4523	Intro to Probability	3
GR 4883	*Radar Meterology	3	GR 4553	**Computer Methods in Meteorology	3
GR 4363	**GIS Programming	3	GR 4313	**Advanced GIS	3
GR 4123	**Urban Geography	3	GR 4323	**Cartographic Sciences	3
DSCI 4553	Capstone 1	3	DSCI 4663	Capstone 2	3

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*Choose 1 course from the following list:

GR 4333	Remote Sensing of the Physical Environment
GR 4783	Satellite Metorology
GR 4883	Radar Meteorology

**Choose 5 courses from the following list:

GR 4733	Synoptic Meteorology
GR 4643	Physical Meteorology and Climatology I
GR 4693	Physical Meteorology and Climatology II
GR 4613	Applied Climatology
GR 4783	Satellite Meteorology
GR 4883	Radar Meteorology
GR 4553	Computer Methods in Meteorology
GR 4313	Advanced GIS
GR 4323	Cartographic Sciences
GR 4333	Remote Sensing of the Physical Environment
GR 4343	Advanced Remote Sensing
GR 4363	GIS Programming
GR 4123	Urban Geography
GG 3613	Water Resources
GG 4233	Applied Geophysics
GG 4413	Structural Geology
GG 4503	Geomorphology
GG 4523	Coastal Environments
GG 4543	Community Engagement in Geosciences
GG 4613	Physical Hydrogeology