

BACHELOR OF SCIENCE (BS) DATA ANALYTICS: SOCIAL SCIENCE ANALYTICS SPECIALIZATION

Major Prerequisites (13 hours)

These courses may overlap with the General Education curriculum where appropriate. Courses in **BOLD** should be completed before submitting an application to the Data Analytics major program.

Department	Course	Hours	Term Offered
Math	MATH 1151 (1161 or 1181H) – Calculus I	5	AU/SP/SU
	MATH 1152 (1172, 2162 or 2182H) – Calculus II	5	AU/SP/SU
Computer Science & Engineering	*CSE 1223 – Computer Programming in Java or *CSE 1224 – Computer Programming in Python	3	AU/SP/SU

*CSE 1222 or CSE placement level A can also fulfill this prerequisite; however, 1223 or 1224 is *strongly* preferred.

Core Requirements (51 hours)

The Data Analytics Core courses follow a strict pre-requisite structure. Some courses are only offered once per year. Failure to successfully enroll in and complete these courses will delay graduation.

Department	Course	Hours	Terms Offered
Math	MATH 2568 – Linear Algebra	3	AU/SP/SU
Industrial & Systems Engineering	ISE 3230 – Systems Modeling and Optimization	3	AU
Computer Science & Engineering	CSE 2221 – Software I: Software Components	4	AU/SP/SU
	CSE 2231 – Software II: Development & Design	4	AU/SP/SU
	CSE 2321 – Foundations I: Discrete Structures	3	AU/SP/SU
	CSE 2421 or 3430 – Systems I: Computer Systems	4	AU/SP/SU
	CSE 3241 – Databases I: Computer Architecture	3	AU/SP/SU
	CSE 3244 or 5242 – Adv. DB & Cloud Computing	3	AU/SP
	CSE 5243 – Data Mining	3	AU/SP
	CSE 5544 or ISE 5760 – Data Visualization	3	AU/SP
Statistics	STAT 3201 – Probability for Data Analytics	3	AU/SP
	STAT 3202 – Statistical Inference for Data Analytics	4	AU/SP/SU
	STAT 3301 – Statistical Modeling for Discovery I	3	AU
	STAT 3302 – Statistical Modeling for Discovery II	3	SP
	STAT 4620 – Statistical Learning	2	AU
	STAT 3303 – Statistical Decision Making	3	SP

Social Science Analytics Specialization (19 hours)

Overview of Research Methods – Choose one research methods course from back of sheet	3
Social Science electives – Choose 9 hours of electives from back of sheet	9
STAT 4911 – Capstone in Data Analytics (SP Senior year)	4
*Independent research in the Social Sciences – DEPT 4998/4999	3

*Meet with a Data Analytics advisor early in your third year to discuss options for fulfilling this research requirement.

GENERAL EDUCATION

Please visit artsandsciences.osu.edu/academics/current-students/advising/ge for a complete list of the General Education curriculum requirements.

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In addition to coursework within the specialization, students completing the Social Science Analytics specialization are required to complete an independent research project of their choosing under the guidance of a faculty member. In order to prepare for this independent research project, **students are encouraged to complete GE courses by strategically selecting relevant coursework that meets their research interests.** There are several GE courses that might be of interest to students depending on the area of research they wish to pursue. Recommended GE courses are listed at data-analytics.osu.edu/social-science-specialization-gen-eds.

OVERVIEW OF RESEARCH METHODS			
COURSE	TITLE	HOURS	PREREQUISITES
Choose one of the following:			
COMM 3160	Communications Research Methods	4	STAT 1450 or higher
POLISCI 4781	Data Analysis in Political Science	3	MATH 1151 & one POLISCI course at 3000-level or higher
PSYCH 2300	Research Methods in Psychology	3	PSYCH 1100 or 1100H
SOCIOL 3487	Research Methods in Sociology	3	None

ELECTIVES: FOCUSED RESEARCH METHODS AND VISUALIZATION AND SPATIAL ANALYSES			
COURSE	TITLE	HOURS	PREREQUISITES
Choose three of the following:			
ANTHRO 5650	Research Design and Ethnographic Methods	3	ANTHROP 2202
ANTHRO 5651	Spatial Analysis for Anthropologists	3	GEOG 5210
COMM 3163	Communication Industry Research Methods	4	STAT 1450 or higher
ECON 4050	Experimental Economics	3	ECON 2001.xx or equiv.
ECON 5420	Econometrics II	3	ECON 5410 & 4002.xx
GEOG 5200	Cartography and Map Design	3	None
GEOG 5201	GeoVisualization	3	GEOG 5200
GEOG 5210	Fundamentals of Geographic Information Systems	3	None
GEOG 5222	GIS Algorithms & Programming	3	GEOG 5210 & 5212 & CSE 1114
GEOG 5223	Design & Implementation of GIS	3	GEOG 5222
GEOG 5225	Geographic Applications of Remote Sensing	3	None
GEOG 5226	Spatial Simulation and Modeling	3	None
POLISCI 3780	Data Literacy and Data Visualization	3	None
PSYCH 4511	Psychological Testing	3	PSYCH 2220 & 2300
SOCIOL 4650	Seminar in Social Networks	3	GE Data Analysis or GE Mathematical and Logical Analysis course