

Social Science Analytics, Certificate

The growth of big data and informatics calls for a new set of skills for social science students and an increased understanding of the logic of data collection and analysis. The undergraduate Certificate in Social Science Analytics focuses on the application side of data analysis. It allows students to focus on the specific research methods and data-driven quantitative skills that are most effective for understanding an increasingly complicated social-political world. The certificate offers an opportunity for interdisciplinary training on how data can be used to address important questions in the social sciences. The Department of Political Science collaborates with the School of Earth, Environment, and Sustainability and the departments of Sociology and Criminology and Statistics and Actuarial Science to offer the undergraduate program in social science analytics; the Department of Political Science administers the certificate.

Requirements

The undergraduate Certificate in Social Science Analytics requires a minimum of 18 s.h. Students complete requirements in five different component areas for a total of at least six courses. Students must maintain a grade-point average of at least 2.00 in work for the certificate. Coursework for the certificate may not be taken pass/nonpass. Courses graded on a satisfactory/unsatisfactory basis may not count toward certificate requirements. Up to 6 s.h. of transfer credit may be counted toward certificate requirements.

The certificate may be earned by any student admitted to the University of Iowa who is not enrolled in a UI graduate or professional degree program. Undergraduate to Graduate (U2G) students may earn the certificate when the undergraduate classification is primary.

Some of the certificate courses have prerequisites not included in the certificate requirements. Students should select courses for which they have met the prerequisites.

The Certificate in Social Science Analytics requires the following coursework.

Requirements	Hours
Introduction to Data and the Social Sciences Course	3
Social Science Research Design and Data Analysis Course	3
Core Statistics Courses	6-7
Building Skills and Data Science Course	3-4
Applied Research Experience	3

Introduction to Data and the Social Sciences

Course #	Title	Hours
This course:		
POLI:1050/ RELS:1050	Big Ideas: Introduction to Information, Society, and Culture	3

Social Science Research Design and Data Analysis

Course #	Title	Hours
One of these:		
POLI:2000	Designing Political Research	3
SOC:2170	Research Methods	3

Core Statistics

Course #	Title	Hours
Two of these:		
POLI:3000	Analyzing Political Data	3
SOC:2160	Applied Statistics for Social Scientists	3
STAT:1020/ PSQF:1020	Elementary Statistics and Inference	3
STAT:2010	Statistical Methods and Computing	3
STAT:3120/ DATA:3120/ IGPI:3120	Probability and Statistics	4
STAT:3200/ DATA:3200/ IGPI:3200/ISE:3760	Applied Linear Regression	3
STAT:4143/ PSQF:4143	Introduction to Statistical Methods	3
STAT:6513/ PSQF:6243	Intermediate Statistical Methods	3

Building Skills and Data Science

Course #	Title	Hours
One of these:		
CS:1210	Computer Science I: Fundamentals	4
CS:2110	Programming for Informatics	4
CS:2420	Analyzing Data for Informatics	3
CS:2520	Human-Computer Interaction for Informatics	3
CS:3980	Topics in Computer Science I	3
ECON:4800	Econometric Analysis: Advanced Causal Inference With Data	3
POLI:3002	Data Visualization	3
POLI:3050	Problems in Methods	3-4
SEES:2050	Foundations of GIS	4
SEES:3540/ IGPI:3540	Geographic Visualization	3
SEES:4150/ GHS:4150/ IGPI:4150	Health and Environment: GIS Applications	3
SEES:4580/ IGPI:4581	Introduction to Geographic Databases	3
SOC:3880	The Sociology of Networks	3
STAT:1015/ DATA:1015	Introduction to Data Science	3
STAT:4520/ IGPI:4522/ PSQF:4520	Bayesian Statistics	3

STAT:4540/ BAIS:4540/ DATA:4540/ IGPI:4540	Statistical Learning	3
STAT:4580/ DATA:4580/ IGPI:4580	Data Visualization and Data Technologies	3
STAT:6560	Applied Time Series Analysis	3

Applied Research Experience

Course #	Title	Hours
At least 3 s.h. from these:		
GHS:3010/ IGPI:3011	Social Science Approaches to Global Health	3
POLI:3001	Hawkeye Poll	3
POLI:3127	Legislative Policy Seminar	3
POLI:3525	Iowa Policy and Opinion Lab	0-3
POLI:3994	Political Science Undergraduate Research Projects	1-4
POLI:4600	Honors Research Project	3
POLI:4701	Undergraduate Research Tutorial	3
SEES:4030	Senior Project Seminar	3
SOC:3170	Applied Research	3
SOC:4998	Honors Research	arr.
STAT:6220/ DATA:6220	Consulting and Communication With Data	3

Career Advancement

The certificate will ensure students are more competitive for careers and opportunities with political campaigns, policy analysis, public opinion firms, consulting and government agencies, and local communities.

The Pomerantz Career Center offers multiple resources to help students find internships and jobs.