

Data Science and Analysis BS, Social Science Emphasis

General Education Requirements

Students must satisfy the university general education requirements. Many of the courses for the degree may be used to fulfill math proficiency, information literacy, social science, and math and life/natural sciences requirements. The program recommends students take ENGL 3130, Technical Writing or ENGL 3120, Business Writing, to satisfy the Junior-Level Writing requirement. Emphasis areas may require one of these courses. There is no foreign language requirement for the degree.

Satisfactory/Unsatisfactory Option

Courses required for the major may not be taken on a satisfactory/unsatisfactory basis.

Degree Requirements

The BS in Data Science and Analysis consists of a set of core courses along with an emphasis area.

Core Course

MATH 1800	Analytic Geometry and Calculus I ¹	3-5
or MATH 1100	Basic Calculus	

Statistics Course 3

The Introduction to Statistics course should align with the student's Discipline Emphasis Area.

Choose one of the following:

SOC/ANTHRO 3220	Quantitative Data Analysis in Social Science Research
BIOL 4122	Biostatistics
ECON 3100	Economic Data and Statistics
CRIMIN 2220	Statistical Analysis in Criminology and Criminal Justice
MATH 1320	Introduction to Probability and Statistics
PSYCH 2201	Psychological Statistics
POL SCI 3000	Political Analysis
SCMA 3300	Business Analytics and Statistics

Additional Required Courses

MATH 4005	Exploratory Data Analysis with R	3
CMP SCI 1250	Introduction to Computing	3
CMP SCI 4200	Python for Scientific Computing and Data Science	3
CMP SCI 4342	Introduction to Data Mining	3

Total Hours 18-20

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Students interested in the Computer Science emphasis area, the Mathematics Emphasis Area, or in taking additional mathematics courses should take MATH 1800.

Emphasis Area Requirements

Choose two of the following. Courses must be from at least two subject areas: 6

ANTHRO 1005	Introduction to Human Evolution
ANTHRO 1011	Introduction to Cultural Anthropology (MOTR ANTH 201)
ANTHRO 1019	Introduction to Archaeology
CRIMIN 1100	Introduction to Criminology and Criminal Justice
CRIMIN 1110	Theories of Crime
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)
POL SCI 1800	Introduction to International Politics (MOTR POSC 201)
PSYCH 1003	General Psychology (MOTR PSYC 100)
SOC 1010	Introduction to Sociology (MOTR SOCI 101)
SOC 2280	Technology and Society

Choose one of the following: 3

CRIMIN 2210	Research Methods in Criminology and Criminal Justice
POL SCI 3000	Political Analysis
PSYCH 2219	Research Methods in Psychological Science
SOC 3230	Social Research Methods

Choose three of the following. Courses must be from two subject areas: 9

ANTHRO 4310	Laboratory Methods in Archaeology
COMM 3150	Crisis, Disaster, and Risk Communication
COMM 4100	Communication Campaigns
POL SCI 3330	Public Opinion and Political Participation
POL SCI 4040	Survey Research Practicum in Political Science
PSYCH 3318	Industrial and Organizational Psychology
PSYCH 4365	Psychological Testing and Assessment
SOC 3344	Problems of Urban Community
SOC 3501	Social Mapping for Change
SOC 4040	Survey Research Practicum for Sociology

Total Hours 18

Learning Outcomes

Upon completion of the program, graduates will be able to:

- Apply knowledge of statistical data collection, analysis and quantitative modeling techniques
- Demonstrate proficiency in industry-standard programming languages that support data acquisition, retrieval and analysis

- Select, apply and build data-based models and visualizations to devise solutions to data science problems
- Effectively communicate technical results and recommendations in various formats to appropriate audiences
- Identify and apply appropriate social theories to understand social phenomena
- Critically evaluate explanations of human behavior and social phenomena
- Apply statistical concepts and data science methods to analyze real-world problems in communications, political science, sociology, or psychology