

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. 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

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|--------------|---|-----|
| 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 | |
| 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

¹ 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

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|-------------|---|
| ANTHRO 1005 | Introduction to Biological Anthropology |
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| ANTHRO 1011 | Introduction To Cultural Anthropology (MOTR ANTH 201) |
| ANTHRO 1019 | Introduction to Archaeology |
| CRIMIN 1100 | Introduction to Criminology and Criminal Justice |
| 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 |
| PSYCH 2219 | Research Methods in Psychological Science |
| SOC 3230 | Research Methods |
| Choose three of the following. Courses must be from two subject areas: 9 | |
| ANTHRO/SOC 4015 | Data Analytics in the Social Sciences |
| ANTHRO/SOC 4160 | Geographical Information Systems in Anthropology and Sociology |
| ANTHRO 4310 | Laboratory Methods in Archaeology |
| POL SCI 3330 | Public Opinion and Political Participation |
| POL SCI 4040 | Survey Research Practicum in Political Science |
| PSYCH 4365 | Psychological Testing and Assessment |
| SOC 3344 | Problems of Urban Community |
| 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