**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 4100 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

$^1$ 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

- ANTHRO 1005 Introduction to Human Evolution
- CRIMIN 1100 Introduction to Criminology and Criminal Justice
- CRIMIN 1011 Introduction To Cultural Anthropology (MOTR ANTH 201)
- CRIMIN 1019 Introduction to Archaeology
- 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
- PSYCH 2219 Research Methods in Psychological Science
- POL SCI 3000 Political Analysis
- SOC 3230 Social 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 4160 Geographical Information Systems in Anthropology and Sociology
- 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 4040 Survey Research Practicum for Sociology

**Total Hours** 18

**Learning Outcomes**

Upon completion of the program, graduates will be able to:
Data Science and Analysis BS, Social Science Emphasis

• 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