Data Science and Analysis BS, Economics 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**

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

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
ECON 4100	Introduction to Econometrics	4
ECON 4110	Applied Econometrics	4
ECON 4120	Time Series Econometrics for Economics and Finance	4
or ECON 4130	Business and Economic Forecasting	
Choose one of the following:		3-4
ECON 4040	Booms and Busts in the Economy: Data and Theory	
ECON 4120	Time Series Econometrics for Economics and Finance (if not used above)	
ECON 4130	Business and Economic Forecasting (if not used above)	
ECON 4160	Geospatial Analysis in the Social Sciences	
Total Hours		**21-22**

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
- Use economic reasoning to construct models to analyze economic phenomena and evaluate public policy at the micro and macro levels
- Use mathematical models to construct and analyze economic behavior
- Apply statistical concepts and data science methods to analyze real-world problems in economics