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

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

Choose one of the following:
SOC/ANTHRO 3220Quantitative Data Analysis in Social Science Research
BIOL 4122Biostatistics
ECON 3100Economic Data and Statistics
CRIMIN 2220Statistical Analysis in Criminology and Criminal Justice
MATH 1320Introduction to Probability and Statistics
PSYCH 2201Psychological Statistics
POL SCI 3000Political Analysis
SCMA 3300Business Analytics and Statistics
MATH 4005Exploratory Data Analysis with R 3
CMP SCI 1250Introduction to Computing 3
CMP SCI 4200Python for Scientific Computing and Data Science 3
CMP SCI 4342Introduction 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 1001Principles of Microeconomics (MOTR ECON 102) 3
ECON 1002Principles of Macroeconomics (MOTR ECON 101) 3
ECON 4100Introduction to Econometrics 4

ECON 4110Applied Econometrics 4
ECON 4120Time Series Econometrics for Economics and Finance 4
or ECON 4130Business and Economic Forecasting
Choose one of the following: 3-4
ECON 4040Booms and Busts in the Economy: Data and Theory
ECON 4120Time Series Econometrics for Economics and Finance (if not used above)
ECON 4130Business and Economic Forecasting (if not used above)
ECON 4160Geospatial 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