**DATA SCIENCE (DATA)**

**DATA Courses**

**DATA 301. Introduction to Data Science. 4 units**  
Term Typically Offered: W  
Prerequisite: CPE/CSC 202; and STAT 302 or STAT 312.

Introduction to the field of data science and the workflow of a data scientist. Types of data (tabular, textual, sparse, structured, temporal, geospatial), basic data management and manipulation, simple summaries, and visualization. 3 lectures, 1 laboratory.

**DATA 401. Data Science. 4 units**  
Term Typically Offered: F  
Prerequisite: CSC 365, CSC 466, DATA 301, STAT 331 and STAT 419.

Principles of data science and big data analytics. Volume, velocity, and variety of data. Acquisition, processing, and cleaning of large data-sets. Analytics for big data. 3 lectures, 1 laboratory.

**DATA 451. Data Science Capstone I. 2 units**  
Term Typically Offered: W  
Prerequisite: DATA 401.

Working with clients to develop data-driven solutions for systems to be constructed in DATA 452. Specification and design requirements, elicitation techniques, research and data gathering methods; project planning, time and budget estimating; project team organization. Ethics and professionalism. 2 laboratories.

**DATA 452. Data Science Capstone II. 2 units**  
Term Typically Offered: SP  
Prerequisite: DATA 451.

Team-based design, implementation, deployment and delivery of a system or analytical methodology that involves working with and analyzing large quantities of data. Technical management of research and development teams. Technical documentation, quality assurance, integration and systems testing. Design and conduct of empirical studies. Visualization and presentation of results orally and in writing. 2 laboratories.