

DATA (DATA)

DATA 200 - Introduction to Data Analytics, 4 credits.

This is an introductory course in using modern data analysis concepts and tools to gain insight and make decisions in a business or organizational setting. Topics include data storage, business intelligence, basic data mining and modeling, visualization, prediction/forecasting, and clustering/segmentation. Students will complete at least one data analytics project, starting from an original research question and concluding with actionable recommendations.

Frequency: *Every Semester*

Core designations: Mathematics K

DATA 316 / MATH 316 - Applied Statistical Models, 4 credits.

An introduction to the construction and analysis of least-squares models, including multiple regression, ANOVA, ANCOVA, and mixed models. Generalized linear models will also be presented, with special attention paid to logistic regression and log-linear models. Examples and applications will be drawn from various disciplines, including biology, medicine, economics, engineering, and the social sciences.

Frequency: *Alternate Years - 2nd Semester*

Prerequisites: MATH 205 or MATH 315 or BUSN 320 or PSYC 230 or SOC 228 or DATA 200

Core designations: Mathematics K

DATA 317 - Forecasting, 4 credits.

Forecasting is the science of predicting future events and outcomes. In this course students will learn how to effectively use both data and theory to create forecasts and how to quantify and communicate uncertainty in forecasts. Topics include random walks, Markov models, time series analysis, Bayesian methods and qualitative forecasting.

Frequency: *Alternate Years - 1st Semester*

Prerequisites: DATA 200 or MATH 205 or MATH 315 or BUSN 320

Core designations: Mathematics K

DATA 318 - Data Mining, 4 credits.

Data mining is the study of discovering and assessing patterns, relationships and information within large datasets. This course provides an introduction to data mining with an emphasis on predictive modeling techniques and machine learning algorithms. Examples and applications will be drawn from various disciplines.

Frequency: *Alternate Years - 2nd Semester*

Prerequisites: DATA 200 or MATH 205 or MATH 315 or BUSN 320 or PSYC 230 or SOC 228

Core designations: Mathematics K

DATA 380 - Special Topics, 0-4 credits.

Courses covering various topics of interest in this particular discipline are offered regularly. Contact department or program chair for more information.

Frequency: *Not offered on a Regular Basis*

Repeatable: Yes

DATA 390 - Academic Internship, 1-8 credits.

Frequency: *Not offered on a Regular Basis*

This course is PEAK Optional

Repeatable: Yes

DATA 470 - Applied Data Project, 4 credits.

This course will allow students to apply their knowledge of data wrangling, analysis, and visualization to implement a data project. Students will learn concepts of data and project management, applying their knowledge to the solving of a significant data-rich challenge.

Frequency: *Alternate Years - 1st Semester*

Prerequisites: DATA 316 or DATA 317 or DATA 318

This course is PEAK Optional

DATA 480 - Independent Study, 1-4 credits.

This course provides an opportunity for individual students to conduct in-depth study of a particular topic under the supervision of a faculty member. Contact the department or program chair for more information.

Frequency: *Not offered on a Regular Basis*

Repeatable: Yes

DATA 487 - Directed Research, 1-4 credits.

This course provides an opportunity for individual students to conduct research in a specific area of study, completed under the direction of a faculty mentor. Specific expectations of the research experience to be determined by the faculty. Repeatable for credit. Prerequisite: consent of instructor.

Frequency: *Not offered on a Regular Basis*

Repeatable: Yes