

APPLIED ANALYTICS (AA)

Courses

AA 630. Data Management for Analytics. 3 Credit Hours.

This course is an introduction to the principles and techniques for acquisition and preparation of data used for analysis and modeling. The first component of the course uses Python to perform simple statistical analysis, prepare data for modeling, and create basic visualizations from the data. The second component of the course shows how data is stored, accessed, manipulated in database systems using SQL. Students finish the course through the completion of a major project based on a large realistic dataset.

AA 640. Data Visualization and Text Mining. 3 Credit Hours.

The purpose of this course is to expose students to text mining techniques using unstructured data. Students will understand the challenges of working with unstructured data such as text and images. The second half of the course focuses on data visualizations and the techniques to implement efficient and effective visualizations. The challenges of storytelling through the use of visualizations will be emphasized.

AA 645. Data Mining and Predictive Analytics. 3 Credit Hours.

This course provides a broad understanding of the role of predictive analytics for decision-making in different application domains. Students will be exposed to a number of predictive analytics techniques originated in related fields of statistics, machine learning, and artificial intelligence. Techniques covered will include statistical techniques such as linear and logistic regression, classification techniques such as decision trees and random forests and boosted trees, association analysis techniques such as market basket analysis, and cluster analysis techniques such as K-means and hierarchical clustering. Applications of each of the techniques for decision-making applications will be emphasized. Various tools including Python, Excel, and Tableau will be used throughout the course. Other tools may be introduced as needed.

Prerequisites: AA630, AA640

Session Cycle: Summer

Yearly Cycle: Annual.

AA 651. Analytics Capstone. 3 Credit Hours.

The Analytics Capstone course provides students with the opportunity to apply the knowledge and skills that they have acquired to realistic problems that involve large data sets. The course will revolve around a project based on a data set from a business partner of Bryant University that will provide real data and define a typical decision set that can be solved using the data. Students will present the results of their analysis and recommendations to other students in the class and if appropriate to the client. Students are expected to create a professional presentation of their work and to deliver it confidently. The project will consist of multiple predictive models to assist the client that will be developed using Python. Multiple predictive modeling techniques learned in prior classes will be used.

Prerequisites: AA 630, AA 640, AA645.

AA 691. Directed Independent Study in Applied Analytics. 3 Credit Hours.

This course is designed to allow an individual academic program to be tailored to fit the unique interest of a graduate student. At the initiation of the graduate student, the faculty member and the student will develop an academic plan that is submitted to the College of Business for final approval.