APPLIED ANALYTICS (AA)

Courses

AA 610. Analytics Methods and Applications. 3 Credit Hours.
This course serves as an introduction to the field of analytics. It covers the core concepts and applications of analytics in different areas. Students will be exposed to the concepts and tools of analytics, namely, data querying and reporting, data access and management, data cleansing, statistical programming, and statistical analysis of large data sets. Quantitative topics covered include descriptive statistics, regression analysis, forecasting, text mining, and data visualization and mining. Each of these statistical concepts will be applied to real world problems by utilizing case studies and appropriate data sets. The program will not focus on formulas; instead students will use the statistical and data mining software packages SAS Enterprise Guide and Enterprise Miner for much of their analysis. Students will also use SAS Forecast Server and SAS Visualization Analytics where appropriate.

AA 620. Data Mining and Predictive Analytics. 3 Credit Hours.
This course will focus on applying data mining methodologies and predictive analytics tools to extract useful patterns from large bodies of data and on interpreting the results in order to take reasoned action to solve problems. Students will work with large data sets from organizations in several different domains and analyze the data using SAS Enterprise Miner. Topics covered include: introduction to data mining concepts, data mining applications, the data mining process, profiling and predictive modeling, decision trees, neural networks, cluster analysis, association analysis and text mining. Students will also be introduced to visualization techniques and applications. An emphasis in this course will be placed on segmentation strategies and techniques.

AA 630. Data Management and Large Scale Data Analysis. 3 Credit Hours.
This course is an introduction to the principles and techniques for data acquisition, storage and management. In this course, students will learn how data is stored, accessed, and eventually analyzed. Basic components of database systems, and how data is accessed using SQL will be discussed. The design considerations for more comprehensive data storage systems such as Data Warehouses and Hadoop will also be covered. Lastly, the course will discuss representation methods and techniques that increase the understanding of complex data. Emphasis will be placed on the identification of patterns, trends and differences from data sets across categories, space, and time. SAS Enterprise Miner and Visualization Analytics will be used during this course.

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 during the GCBA to realistic problems that involve very large data sets ("Big Data"). In addition to using the techniques students have learned in the previous courses, students will be introduced to other important topics related to Big Data such as Hadoop, map-reduce, association rules, large scale supervised machine learning, streaming data, clustering algorithms, and NoSQL systems (Cassandra, Pig, Hive), as well as SAS software packages. The course will culminate with a final project based on a large data set. Students will present the results of their analysis and recommendations to other students in the class and where appropriate to the organization that sponsored the project. Topics in project management will be presented during the course to help students organize their capstone project.

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.