APPLIED ANALYTICS (AA)

Courses

AA 205. Introduction to Applied Analytics. 3 Credit Hours.
This is an introductory course in applied analytics. The focus is on using data and being able to gain insight into the data for multiple purposes. Analytics will be studied from a wide variety of fields and disciplines including using data visualization, text mining, and data mining methodologies to investigate questions related to the arts, business, humanities, social and physical sciences. The insight students gain may assist them in making effective decisions or the insight may be derived from analyzing textual data that were previously not thought to be significant.
Prerequisites: MATH 201
Session Cycle: Fall, Spring
Yearly Cycle: Annual.

AA 304. Managing Information for Applied Analytics. 3 Credit Hours.
This course is about the management of information, how it is acquired, stored, and deployed effectively and how it may be analyzed for applications in a wide variety of domains such as literary and historical text analysis, social media, bioinformatics and business decision making. With the technology of today, we can gather data sets from many sources, some that are so large and complex (Big Data) that using traditional database management tools becomes difficult. Information management today must also deal with huge amounts of unstructured data that is being generated by social media in blogs, tweets, videos, speech, photographs, e-mails, and others. Not only are we faced with the challenge of how to store all of this data, but how we can effectively extract relevant information and visualizations from these disparate sources and gain valuable insights. This course brings together several key technologies-- databases, data warehouses, and large distributed data repositories--in a project that demonstrates how data can be stored, manipulated, and visualized.
Prerequisites: AA 205
Session Cycle: Fall, Spring
Yearly Cycle: Annual.

AA 306. Data Mining for Effective Decision Making. 3 Credit Hours.
In very simple terms, analytics is about the discovery and communication of meaningful patterns in data. This course is about applying analytics to create useful information that provides insights, fosters inquiry, and supports effective decision making and problem solving. It follows that the target audience for this course is anyone who anticipates having a need for useful information during their career and in their personal life. The approach taken in this course is that analytics is a tool that may be applied to achieve a desired outcome. Without a clear purpose or objective, the use of analytical methodologies is nothing more than a fishing expedition. It also follows that even when a clear objective is present, the application of analytics is only useful if the results of the analysis lead to reasoned action. Therefore, this course is more than a review of analytical methodologies. It is also about understanding problems, setting objectives, critical thinking and interpreting results. Problems will be addressed in a variety of disciplines including applications in liberal arts, science and business.
Prerequisites: AA 205
Session Cycle: Fall, Spring
Yearly Cycle: Annual.

AA 490. Applied Analytics Capstone. 3 Credit Hours.
In AA 490, students complete a comprehensive real-world data project along with a presentation to the class and other interested parties of key aspects of the project with an analysis of the results. This will be a learning experience that gives students the opportunity to conduct real-world data preparation and analysis using data in a field relating to their primary area of concentration or major. Students will need to understand the problem, and then clean and analyze the data. The scope of the project is not only to complete a well-defined piece of work in a professional manner, but also to place the work into the context of an analytics environment by applying current state of the art techniques.
Prerequisites: AA 205, AA 304, AA 306, junior standing or permission of the instructor
Session Cycle: Fall, Spring
Yearly Cycle: Annual.