INFORMATICS AND ANALYTICS (IAF)

IAF 601 Introduction to Data Analytics-Methods and Approaches 3
Managing, manipulating, and analyzing structured/unstructured data to understand relationships and generate useful insights. Principles such as programming for analytics, data visualization, statistical modeling, database design, high performance computing are discussed. 
**Prerequisites:** Programming and statistics experience (Permission of Instructor Required).

IAF 602 Statistical Methods for Data Analytics 3
This course introduces fundamental statistical techniques for data analytics such as hypothesis testing, data transformation, estimation, confidence intervals, regressions models, ANOVA, multivariate analysis, non-parametric methods, and design of experiments.

IAF 603 Preparing Data for Analytics 3
Students are exposed to current approaches, techniques and best practices for collecting, cleaning and normalizing data, processing, storing, managing, securing and preparing structured and unstructured big data sets for analytics.

IAF 604 Machine Learning and Predictive Analytics 3
This course is an introduction to machine learning and predictive analytics for Big Data. Some key components include deep learning, supervised, unsupervised models, regression, inductive learning, and time series analysis. 
**Prerequisites:** Grade of C or better in IAF 601 and IAF 603 or permission of instructor.

IAF 605 Data Visualization 3
Data are analyzed to answer questions. Students are exposed to concepts and techniques to understand analytics results and appropriately infer relationships to answer questions and visualize results using contemporary techniques. 
**Prerequisites:** IAF 601, IAF 603, or permission of instructor.

IAF 606 Solving Problems with Data Analytics 3
This course addresses how data analytics is used to solve applied problems in varied contexts. Students will learn how to choose appropriate methodologies, manage data, conduct analyses and report results. 
**Prerequisites:** IAF 601, IAF 602, or permission of instructor.