DECISION SCIENCES (DS)

**DS 101. Introduction to Business Analytics.** 3 Units
Prerequisite(s): MATH 24, STAT 1; must be a business pre-major, business major (any concentration), or business minor, and have at least sophomore standing
Term Typically Offered: Fall, Spring
Introductory course in business analytics that focuses on the application of analytics linking data to business decisions.

**DS 102. Foundation and Tools for Business Analytics.** 3 Units
Prerequisite(s): MATH 24, STAT 1; Business, Computer Science, and Mathematics are approved majors to enroll in the course.
Term Typically Offered: Fall, Spring, Summer
The purpose of this course is to introduce Python and R programming languages and other analytics software tools needed in various business analytics courses. Students will learn Python and R programming constructs and data structures. Students will use these analytics tools to retrieve data from various sources, pre-process data, and perform data analysis for business insights and data-driven solutions.

**DS 105. Decision Analytics.** 3 Units
Prerequisite(s): MATH 24, STAT 1
Term Typically Offered: Fall, Spring
Introduces students to decision models for the solution and analysis of business problems. Topics include mathematical programming, decision theory, analysis of waiting lines, simulation, and Markov processes.

**DS 110. Data Mining for Business Analytics.** 3 Units
Prerequisite(s): DS 101 or STAT 103 or ENGR 115 or equivalent. DS 102 or instructor consent. Business, Computer Science, and Mathematics are approved majors to enroll in the course.
Term Typically Offered: Fall, Spring
Data mining methods including data visualization, classification (logistic regression, discriminant analysis), tree-based methods, cluster analysis, principle components analysis, factor analysis, neural networks, classification and regression trees, and facilitated through software. Focus on applications in the business environment.

**DS 115. Advanced Business Analytics.** 3 Units
Prerequisite(s): DS 110. Business, Computer Science, and Mathematics are approved majors to enroll in the course.
Term Typically Offered: Fall, Spring
This course introduces students to more advanced topics in business analytics including Neural Networks, Deep Learning, Text Mining, Social Network Analytics, Computer Vision, and their applications in business.