

# DECISION SCIENCES (DS)

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## **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.