

BUSINESS ANALYTICS (BANL)

BANL 502

Analytics for Decision Making

Spreadsheets are a popular model-building environment for managers. Add-ins and enhancements to Excel have made powerful decision-making tools available to the manager. This course covers how to use the spreadsheet to develop and utilize some of these decision-making aids. Visual Basic for Excel allows the nonprogrammer to create modules for functions, subroutines, and procedures. Topics include forecasting (both regression and time series), decision-making under uncertainty and decision trees, using SOLVER for optimization, and probabilistic simulation using @RISK.

Lecture: 3 Lab: 0 Credits: 3

BANL 506

Database Design and SQL

This course covers the fundamental principles of relational database systems with a focus on understanding the principles of the data model in relational databases and using SQL to create and manipulate relational databases. The topics covered in this course include Relation Data Model, ER Modeling, Normalization and SQL. The course uses Teradata to provide hands-on experience in using SQL. The course will equip students to work with most database systems used in the modern workplace.

Lecture: 3 Lab: 0 Credits: 3

BANL 507

Visual Analytics - Data Analytics & Visualization

This course provides an introduction as well as hands-on experience in data visualization. It introduces students to design principles for creating meaningful displays of quantitative and qualitative data to facilitate managerial decision-making. Analytics involves the extensive use of computer applications, data (both "big" and "small"), and quantitative methods to help drive business decisions. Students will learn essential theories, concepts, methodologies, and use leading computer tools to visualize and analyze real world data.

Lecture: 3 Lab: 0 Credits: 3

BANL 522

Predictive Analytics

The digital enterprise captures significantly more data about its customers, suppliers, and partners. The challenge, however, is to transform this vast data repository into actionable business intelligence. Both the structure and content of information from databases and data warehouses will be studied. Basic skills for designing and retrieving information from a database (e.g., MS Access) will be mastered. Data mining and predictive analytics can provide valuable business insights. A leading data mining tool, e.g., IBM/SPSS Modeler, will be used to investigate hypotheses and discover patterns in enterprise data repositories. Analysis tools include decision trees, neural networks, market basket analysis, time series, and discriminant analysis. Both data cleaning and analyses will be discussed and applied to sample data. Applications of data mining in a variety of industries will be discussed. Software exercises, case studies, and a major project will prepare the students to use these tools effectively during their careers.

Lecture: 3 Lab: 0 Credits: 3