GRADUATE COURSE DESCRIPTIONS (BDA)

BDA

Decision Analytics

BDA 503: Data Analysis & Decision Making
An introduction to statistical techniques useful in the analysis of management problems. We motivate each topic by managerial applications, and we analyze actual data sets using modern statistical software. Topics include probability estimation, hypothesis testing, and regression analysis. 3 credits, Letter graded (A, A-, B+, etc.) Prerequisite: Admission to the BDAMS MS in Decision Analytics
3 credits, Letter graded (A, A-, B+, etc.)

BDA 508: Advanced Analytics
This course introduces students to challenging business problems in distribution, routing and scheduling, and to the solutions strategies for such problem via discrete optimization. The topics include integer programming techniques such as cutting plane and branch and bound, special purpose algorithms for distribution and network problems, and heuristic optimization techniques for combinatorial optimization, such as Simulated Annealing, Tabu Search, Evolutionary Algorithms, Ant Colony Optimization. Prerequisite: MBA 543
3 credits, Letter graded (A, A-, B+, etc.)

BDA 510: Advanced Data Analysis and Decision Making
By successfully completing this course, the student will have an understanding of the ways in which advanced statistical methods are used to address significant decision-making problems as they arise in the business setting. Specifically, the student will understand the various ways in which decision problems can be formulated and solved and how to deal with violations of the assumptions commonly found in standard methods. The student will have a greater understanding of multivariate models and ways to build them, and how to handle data collected over time in looking for trends and in making predictions. Prerequisite: MBA 503
3 credits, Letter graded (A, A-, B+, etc.)

BDA 513: Risk and Uncertainty Analysis
This is a hands-on course on computer simulation and other probabilistic modeling approaches to analyze and improve business, service, and manufacturing systems that are subject to risk. The course takes the perspective of the consultant whose job is to analyze managerial decision based on imperfect observations and unknown outcomes to understand the behavior of the system and explore the effects of alternative decisions. Prerequisite: MBA 503
3 credits, Letter graded (A, A-, B+, etc.)

BDA 540: Data Mining for Business Intelligence
The recent advances in the Internet and information technologies have resulted in an explosion of demand for big data analytics. The importance of data mining has already been recognized widely in the industry including many business areas, such as marketing science, financial analysis, and corporation management. In this course, we will be focusing on both key concepts and models of data mining and their implementations based on real-world data in business. Students will learn to process data using Excel, and apply data mining models using Weka, a data mining software. 3 credits, Letter graded (A, A-, B+, etc.) Prerequisite: Admission to the BDAMS MS in Decision Analytics & BDA 503
3 credits, Letter graded (A, A-, B+, etc.)

BDA 543: Business Analytics
An introduction to mathematical models useful in the analysis of management problems. We motivate each topic by managerial applications, and we analyze problems using modern software. Topics include forecasting, linear, nonlinear, and integer optimization, simulation, Markov processes, decision analysis, and multi-criteria decision making. 3 credits, Letter graded (A, A-, B+, etc.) Prerequisite: Admission to the BDAMS MS in Decision Analytics & BDA 503 prerequisite/corequisite
3 credits, Letter graded (A, A-, B+, etc.)

BDA 587: Decision Support Systems

BDA 588: Database Management
Database processing is the foundation upon which all current applications rely and represent the repositories of business intelligence that play a crucial role in the strategic success or failure of a corporation. Even though they vary in size, complexity and organizational scope, there is an underlying common database engine that can be used to manipulate and analyze the stored information. The purpose of this course is to introduce the business professional to the fundamental concepts of database creation, design, application integration, maintenance, management, and subsequent analysis. 3 credits, Letter graded (A, A-, B+, etc.)