



### **INFO 4100 Survey of Business Analytics (4 Credit Hours)**

This course provides an overview of business analytics: how business data is collected, processed, and analyzed to support decision making. It will address both how to assess and use data that is readily available as well as how to start with corporate strategy and determine what data is needed, how to generate and process it. The course will also explore how corporate culture, ethics, and globalization can affect data management and analytic decision-making.

### **INFO 4140 Business Databases (4 Credit-Hours)**

This is an introductory database course which will cover enterprise database design, modeling and implementation. Students with existing proficiency in databases can substitute another BIA graduate course.

### **INFO 4120 Python Programming**

This course introduces students to the fundamentals of programming, using the Python language. In addition to programming logic and execution of algorithms, the course uses the statistical and analytic capabilities built in to Python to use the language for statistical analysis of data sets and analytic modeling.

### **STAT 4610 Business Statistics (4 Credit-Hours)**

This course introduces students to the basic analytical tools in statistics and business analytics, and provides the theoretical concepts and skills that are building blocks for future courses. The approach is to present students with a “corporate” view of how statistical tools are used to analyze data and facilitate business decision-making. Students will MSBA Program November 4, 2016 2 familiarize themselves with all of the statistical techniques and models presented in the course and will demonstrate knowledge in applying the appropriate techniques and models to various data sets and interpreting the results of the analysis. The Microsoft Excel Data Analysis and Solver Toolkits will be used to conduct statistical analyses, allowing students to become more proficient overall in using Microsoft Excel and to place their emphasis on applications to core business disciplines, statistical reasoning, and proper interpretation of results.



### **INFO 4590 Optimization (4 Credit-Hours)**

This course introduces students to the basic optimization modeling techniques and tools as practiced by business analysts, operations research analysts, data analysts, data scientists, decision scientists, decision support scientists, business intelligence analysts, quants, actuaries, financial analysts, marketing analysts, and anyone else interested in using analytics to improve the bottom line. The course will focus on problem definitions, problem configuration, spreadsheet solution, LP Software (LINGO) solutions, and interpreting and implementing results.

### **INFO 4200 Capstone Planning (2 Credit-Hours)**

This course is intended to help the student line up an instructor, company, and a business issue to be addressed in his/her capstone course in the final quarter. (Must be taken two quarters prior to INFO4400, with the exception of 4+1 students, who will take it the quarter prior to INFO4400.)

### **INFO 4700 Current Topics in Business Analytics (2 Credit-Hours—Required for 4+1 Students Only)**

Students in the Current Topics class will listen to many guest speakers describing the current opportunities and challenges in Business Analytics. The class will meet weekly and students will demonstrate mastery by writing a paper that covers one of the topics in Business Analytics and how the student might be able to affect the future. This course is required for 4+1/DUGG students on the 48-credit hour program. The lecture series is open to all DU students.

### **INFO 4240 Data Warehousing (4 Credit-Hours)**

This course introduces students to the main components of a data warehouse for business intelligence applications. Students will learn how a data warehouse fits into the overall strategy of a complex enterprise, how to develop data models useful for business intelligence, and how to combine data from disparate sources into a single database that comprises the core of a data warehouse. Students will also explore how to define and specify useful management reports from warehouse data. Prerequisites: INFO 4100, INFO 4140.

### **INFO 4280 Project Management (4 Credit-Hours)**

In this course students examine the science, practice the art, and discuss the folklore of project management to enable them to contribute to and manage projects as well as to judge when to apply this discipline. The course also covers the use of MS Project Professional as a management tool and Crystal Ball as a Monte Carlo simulator for project exercises. Prerequisite: INFO 4100



### **INFO 4300 Predictive Analytics (4 Credit-Hours)**

This course is designed to prepare students for managerial data analysis and data mining, predictive modeling, model assessment and implementation using large data sets. The course addresses the how, when, why, and where of data mining. The emphasis is on understanding the application of a wide range of modern techniques to specific decisionmaking situations, rather than on mastering the theoretical underpinnings of the techniques. The course covers methods that are aimed at prediction, forecasting, classification, clustering, and association. Students will gain hands-on experience in using computer software to mine business data sets. Prerequisite: STAT 4610.

### **INFO 4340 Data Mining and Visualization (4 Credit-Hours)**

In this course, students create business intelligence tools such as balanced scorecards, data visualization and dashboards to inform business decisions. The course will focus on the identification of metrics, measures, indicators and key performance indicators for a variety of business operations. The focus will be on the advantages and disadvantages of various modeling methodologies and implementations moving towards performance improvement. Prerequisite: STAT 4610.

### **INFO 4360 Complex Data Analytics (4 Credit-Hours)**

This course addresses the rapidly-growing demands on businesses created by the prevalence of big and unstructured data. These include management of big data, big-data analytics, analysis of unstructured data (to include text mining), and management and analysis of real-time (streaming) data. The focus will be on enhancing business decision-making in the presence of big data, and on how to create the greatest ROI with large data sets.

### **INFO 4380 Decision Processes (4 Credit-Hours)**

This course addresses the process of decision making in the enterprise: who makes what decisions based on what information and for what purpose. Business Intelligence is premised on the HP motto: “In God we trust. All others bring data.” But what is the cost of collecting and analyzing the data and presenting the results, and what decisions justify that cost? Is the transformation from data to decision always rational, and what are the common pitfalls for human decision makers? We examine the results of recent experiments from behavior economics and their relevance to making business decisions. Prerequisite: INFO 4100.



### **INFO 4400 Capstone (4 Credit-Hours)**

This course will give the student an opportunity to apply the knowledge and skills learned in this program to a real- world problem submitted by a partner business. Students will take a business problem from problem definition, model construction and data collection through analysis and presentation of results to recommendations for specific business decisions. Prerequisite: INFO 4200.

### **INFO 4520 Health Informatics (4 Credit-Hours)**

Annual health care spending in the United States exceeds 16% of GDP (\$2 Trillion) and is expected to continue to increase. The effective use of information technology is perceived as an important tool in increasing the access to and quality of health care delivery in a cost effective manner. This course examines the role of health informatics in the health care delivery and management process. The objectives of this course are to familiarize students with the critical issues and challenges faced by those in the healthcare environment, what technologies are or will soon be available to potentially address these issues and challenges, potential barriers professionals employed in the healthcare field may face deploying and managing these technologies, and possible strategies to assist these professionals in addressing and overcoming these barriers. This course focuses on four major areas related to health informatics: the role of electronic health records, clinical decision support systems, analytics, and other ehealth initiatives such as mobile technologies and telehealth.