

BUSINESS INFORMATION AND ANALYTICS (INFO)

INFO 1010 Analytics I: Data Management and Analysis (4 Credits)

The amount of data businesses are able to maintain and process is growing exponentially, and the ability to manage that data successfully can give a business a tremendous competitive advantage. This course introduces the student to the business data landscape, as well as basic data management and analysis skills through spreadsheet and database applications. Student projects focus on data collection, data cleansing and mining, statistical and graphical analysis, basic modeling, and written presentation skills. Corequisite with INFO 1011.

INFO 1011 Microsoft Excel Certification Lab (0 Credits)

This course covers basic topics in Excel and is designed to prepare students for the Microsoft Office Specialist Excel exam (associate level) and to introduce students to the basic Excel features and functions that will be used in future classes and professional settings. In the Daniels College of Business, passing the Microsoft Office Excel Specialist Exam is a pre-requisite for other classes, is a requirement for secondary admission, and is a graduation requirement. The course uses projects to represent real-world scenarios. No prerequisites or restrictions.

INFO 1020 Analytics II: Business Statistics and Analysis (4 Credits)

Businesses can never have perfect information; therefore, they must employ statistical techniques to improve the decision-making process. This course introduces students to the basic tenets of probability and statistics, with an emphasis on business applications. Statistical models as decision-support tools are taught. Student projects focus on data collection, data analysis, decision analysis, and written presentation skills. Prerequisites: INFO 1010, and (MATH 1200 or MATH 1951). Corequisite: INFO 1021.

INFO 1021 Microsoft PowerPoint and Word Certification Lab (0 Credits)

This course covers basic topics in Word and PowerPoint and is designed to prepare students for the Microsoft Office Specialist Word and PowerPoint exams (associate level) and to introduce students to the basic Word and PowerPoint features that will be used in future classes and professional settings. In the Daniels College of Business, passing the Microsoft Office Word Specialist Exam and Microsoft Office PowerPoint Specialist Exam is a pre-requisite for other classes, is a requirement for secondary admission, and is a graduation requirement. The course uses projects to represent real-world scenarios. Corequisite: INFO 1020. No prerequisites or restrictions.

INFO 1031 Advanced Excel Certification Lab (0 Credits)

The course covers advanced topics in Excel. The course goes beyond just the topics on the Excel Expert Certification exam and looks at functions and features that students are likely to use in work situation. The course uses projects to represent real-world scenarios. A score of 850 or higher on the Microsoft Office Specialist Excel exam (associate level) is highly recommended (but not required) to be sufficiently prepared for this course, and to be able to progress through course material in preparation of the Microsoft Office Excel Expert exam.

INFO 2020 Analytics III: Business Modeling and Analysis (4 Credits)

Businesses make decisions and improve processes using a variety of modeling and analytic techniques. This course introduces the student to the techniques of multiple regression analysis, time series analysis, spreadsheet modeling, and simulation for solving a variety of business problems. Applications include economic forecasting, supply chain management, and project management. Student projects focus on using spreadsheet modeling for problem solving, and emphasize written and oral presentation techniques. Prerequisites: INFO 1020 and Microsoft Excel Certification.

INFO 3100 Automating Business Processes (4 Credits)

This course focuses on using Microsoft Excel and Python to support decision making for managers. This course will cover advanced Excel functions and menu options along with basic spreadsheet modeling design and good practices. It will also cover automating tasks in Excel using VBA. We will then transition into using Python to create programs outside of the Microsoft Office environment. In both platforms the focus is on basic programming logic, reading and writing data, creating data summaries and pivot tables and basic statistical tests and summaries. Prerequisite: INFO 2020.

INFO 3110 Applied Nonparametric Statistics (4 Credits)

This course develops a more advanced understanding of the fundamental concepts of probability and statistics, and how they relate to managerial type problems and decision making. You will develop experience performing and interpreting standard and particularly nonparametric data analysis methodologies, such as the sign test, the signed rank test, the rank sum test, and nonparametric correlations. You will obtain familiarity with a statistical software package. Prerequisite: INFO 2020 (minimum grade of C-).

INFO 3140 Foundations of Information Management (4 Credits)

This course introduces students to the foundations of information management (e.g. database management). Specifically, this course will focus on database theory, appropriate database design, modeling tools, and the practical issues of database implementation and management. Designing and developing databases is an iterative process, and the class approach will be practical and hands-on. Prerequisite: INFO 2020.

INFO 3200 Data Mining and Visualization (4 Credits)

This course explores the concepts of storytelling with data, prediction modeling, and presenting statistical results. It covers the concepts of visualization terminology along with all the steps of the modeling process: define goal, get data, explore & visualize data, pre-process data, partition the data series, apply modeling technique(s), evaluation and compare performance, implement the model, and communicate the results. The modeling techniques covered include Time Series Forecasting, Clustering, Principal Components Analysis, Decision Trees, Naïve Bayes, K-Nearest Neighbor, Multiple and Logistic Regression, and Machine Learning Approaches. This course also covers the interpretation of real-time business data in terms of dashboards and scorecards. Prerequisite: INFO 2020.

INFO 3240 Enterprise Information Management (4 Credits)

This is the second in a series of two courses designed to introduce students to information management. This course focuses on procedural programming using T-SQL, an introduction to an enterprise information management system using Microsoft SQL Server and an introduction to an integrated development environment using Microsoft Visual Studio. Prerequisite: INFO 3100 and INFO 3140.

INFO 3300 Data Warehousing and Business Intelligence (4 Credits)

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. Prerequisite: INFO 3240.

INFO 3320 Sports Analytics (4 Credits)

This course serves as an introduction to sports analytics. Analytical topics will include, but are not limited to, regression (or predictive) modeling, optimization, ranking methodologies, web scraping, among others. Sports topics will include topics from most professional sports, gambling (daily fantasy sports), and business operations. In addition, the students will learn how to communicate their results (business reports, dashboards, etc.) of the various modeling exercises and projects using RStudio and the RMarkdown suite of tools.

INFO 3340 Project Management and Simulation (4 Credits)

"Cheaper, better, faster" is the mantra of modern business. Innovation, providing new products and services or using improved business processes, has become a prerequisite for businesses to thrive and flourish. Project Management is a discipline which supports innovation by examining how to facilitate one-time events such as constructing a building, installing a software system, taking a product to market, reengineering a marketing process, or merging an acquired company. In this course, we examine the science, practice the art, and discuss the folklore of project management to enable students to contribute to and manage projects as well as to judge when to apply this discipline. Monte Carlo simulation modeling is also covered to explore the benefits and limitations of simulation as a tool for solving business problems, and to present students with the opportunity to build, analyze, and report on Monte Carlo simulations. Prerequisite: INFO 2020.

INFO 3350 Statistical Computing (4 Credits)

This course will provide the student with a base of skills necessary to program in one or more common scripting software packages. No prior programming knowledge is required. After completion of the course, the student will be able to independently perform most basic statistical procedures using either software package. The student will also have the tools necessary to learn advanced topics from the software package documentation by themselves. Prerequisite: INFO 2020.

INFO 3400 Complex Data Analytics (4 Credits)

This course explores the concepts of the considerations and management of big data projects. It also explores technical aspects of performing text analytics and natural language processing, social network analysis, and social media analysis. We focus on social data for many of the examples and also explore how disparate data sources can be combined to provide insight for business decisions. Prerequisite: INFO 3200.

INFO 3440 Optimization Modeling (4 Credits)

This course introduces concepts and techniques for the modeling and solution of business decision problems. It gives broad coverage to the formulation of optimization models and the use of commercially available software tools for solving them. These models include topics such as linear programming, integer programming, the transportation and assignment problems, network optimization models and non-linear programming. Emphasis is placed on the process of analyzing business scenarios, formulating models in spreadsheet and open-source software, interpreting model output, and presenting written project reports. Prerequisite: INFO 2020.

INFO 3477 Database-Driven Websites (4 Credits)

This course provides a comprehensive overview of website development. Students explore the prevailing vocabulary, tools, and standards used in the field and learn how the various facets including HTML5, CSS, JavaScript, VBScript, ASP, PHP, HTTP, clients, servers, and databases function together in today's web environment. In addition, software and services that are easily incorporated into a website (e.g. maps, checkout, blogs, content management) are surveyed and discussed. Students produce an interactive website on the topic of their choice for the final project and leave the course prepared to develop real world database driven websites. Prerequisite: INFO 3140.

INFO 3500 Capstone/Senior Project (4 Credits)

This course gives 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 take a business problem from problem definition, data collection, and model construction, through analysis and presentation of results to recommendations for specific business decisions. Prerequisites: All other Business Analytics major courses.

INFO 3700 Topics in Business Analytics (1-4 Credits)

Exploration of various topics and issues related to timely analytics applications. Prerequisite: INFO 2020.

INFO 3980 Internship (0-10 Credits)

Internship; requires written report.

INFO 3991 Independent Study (0-4 Credits)

Independent research/study; requires written report.