INFORMATION & DECISION SCIENCE (INFO)

INFO 173 Spreadsheet Modeling for Business Decisions (3 credits)
This course emphasizes the development of Microsoft Excel skills and applications. In addition to basic skill building strong emphasis will be placed on business problem analysis and solution development through spreadsheet modeling. Students will also develop skill in presenting models in visual, written, and oral form. Meets Computer Science Gen Ed.

INFO 210 Database Systems (3 credits)
Prerequisite(s): INFO 290; or ACCT 309 for Accounting majors. Restriction(s): Business Administration Majors, Business Analytics Majors, or Business Analytics Minors only. This course provides students an overview of the development, applications and management of database systems in business. Students are given a series of hands-on exercises and projects to practice skills in data analysis, database design, database queries and applications. This course also introduces concepts of database administration and Web based database applications. Equivalent course INFO 310 effective through Summer 2023.

INFO 230 Introduction to Business Co-Op Work Exp (3-6 credits)
Restriction(s): Sophomore level status (45+ semester hours completed) with a 2.25 minimum grade point average; Business Administration major. This is an introductory cooperative education course which integrates formal classroom study and assignments with a supervised full-time or part-time off-campus employment experience. The purpose of this course is to develop self-awareness and to explore educational and occupational alternatives.

INFO 240 Statistical Methods in Business (3 credits)
Prerequisite(s): MATH 100 or a score of 61 or higher on the ALEKS Math Placement Test. This course is a comprehensive introduction to the application of modern statistical methods used in enumerative and analytic studies in business. Topics covered include: use of percentages, proportions, rates, ratios and indices; descriptive statistical methods of data analysis; probability; an introduction to discrete and continuous probability distributions; the normal distribution; classical statistical inference - sampling distributions, confidence interval estimation and hypothesis testing for the mean and the proportion and for differences in two means and differences in two proportions; an introduction to control charts. Spreadsheet software is integrated in all topics. Satisfies Mathematics GenEd requirement; satisfies SEEDS Quantitative Reasoning student learning outcome in alignment with Educated Citizenry value. Special fee.

INFO 257 Programming for Business (3 credits)
Prerequisite(s): INFO 240. Restriction(s): Business Administration Majors, Business Analytics Majors, or Business Analytics Minors only. This course enhances students' ability to use computer programming to solve business problems. Students are introduced to the concepts of object-oriented programming in business applications. This course teaches programming from the data analysis perspective by focusing on topics such as feature extraction, missing data imputation, exploratory data analysis, and statistical analysis. The course uses current programming languages, such as R or Python. Specific emphasis is placed on creation and transformation features in addition to cleaning, summarizing, organizing, and visualizing datasets. Students will develop analytical skills, learn to code in a programming language, and understand how to extract insights for data-driven business decision-making. Equivalent course INFO 357 effective through Summer 2023.

INFO 265 Foundations of Business Analytics and Artificial Intelligence (3 credits)
Prerequisite(s): INFO 240. Restriction(s): Business Administration Majors, Business Analytics Majors, or Business Analytics Minors only. This is the first course in the business analytics concentration and provides a comprehensive overview of the fundamental concepts and tools of business analytics for improving business decision making and organization performance. The major topics discussed are: (i) the process of business intelligence and business analytics, (ii) the core concepts of "big data" management, (iii) the principles of data visualization and dashboard design, and (iv) the techniques of predictive analytics. Spreadsheet or commercial software is integrated in all topics. Equivalent course INFO 357 effective through Summer 2023.

INFO 266 Data Analysis and Visualization (3 credits)
Prerequisite(s): INFO 210 may be taken as prerequisite or corequisite. Restriction(s): Business Administration Majors, Business Analytics Majors, or Business Analytics Minors only. This course is a comprehensive introduction to the fundamental concepts and tools needed for participating in the developing discipline/field of business analytics which is aimed at improving business decision making and organization performance. The use of data warehouses to support business analytics is discussed and four core topics of business analytics are covered: (1) Data visualization through dashboard design; (2) Descriptive and inferential methods of data analysis; (3) Big data modeling, and (4) Methods of optimization. The core of business analytics will be developed from three perspectives - descriptive analytics, predictive analytics and prescriptive analytics. Spreadsheet or commercial software is integrated in all topics. Equivalent course INFO 440 effective through Summer 2023.

INFO 290 Technology in Business (3 credits)
Prerequisite(s): INFO 173. This course provides an introduction to the impacts of information systems on business. The course focuses on business processes and information needs in organizations, the roles of information systems in addressing these needs, and ultimately, providing support for the tactical and strategic directions of the business. The building blocks of information systems (hardware, software, networking, Internet, cloud computing, systems analysis, security, e-business, database systems, enterprise systems, etc.) are presented with an emphasis on how each of these components impacts business processes. Special fee.

INFO 299 Special Topics in Data and Technology (3 credits)
This course is designed to provide students with a comprehensive understanding of contemporary topics related to business-focused information technology (IT) and data analytics. Over the course of the semester, students will explore various aspects of IT and data analytics, including their applications, challenges, and implications for individuals and organizations. Through a combination of lectures, class discussions, and practical exercises, students will develop their knowledge of IT and data analytics. May be repeated for a maximum of 6 credits, provided the topic is different.

INFO 300 Integrated Core: Operations Management (3 credits)
Corequisite(s): FINC 300, MKTG 300 and MGMT 300. Prerequisite(s): BCOM 280 may be taken as prerequisite or corequisite; and ACCT 201 or ACCT 204. Restriction(s): Business Administration majors and minors, Business Analytics majors and minors, and Accounting majors only. This course is an intro to managerial concepts & quantitative tools required in the design, operation, and control of processes & systems needed to deliver a product or service in a business. Clearly, this material must be integrated with all of the other functional areas of an organization. In addition to examining the operational concepts, theories and tools, the course will include discussions of the interrelationships of these topics and their usefulness in the areas of marketing, management, finance & business strategy. The course will present methods that ensure that business operations are efficient in using as few resources as needed, & effective in meeting customer requirements. Focus will be on managing the processes that convert inputs (in the forms of materials, labor, and energy) into outputs (in the form of goods and/or services). This course incorporates mathematical, statistical, & decision making methods in the analysis of specific business processes & systems. The topics covered include operations strategy, process optimization & management, inventory control, production planning & scheduling, queuing, supply chain management, quality control, decision making, & project management. Computers are used to solve problems involving complex systems. 1 of 4 courses within the Integrated Semester of the undergraduate program. Special fee.

INFO 301 Business Decision Making (3 credits)
Prerequisite(s): INFO 173 or CSIT 100; and AMAT 120 or MATH 106 or MATH 122 or MATH 221 or STAT 109; or departmental approval. Restriction(s): For Business minors only. The underlying theme of the course is business problem solving. This course engages students in employing tools from operations management and management information systems in the solution of business problems. Analysis of quantitative decision-making and information systems from the management point of view will be covered. Special fee.

INFO 302 Business Analytics and Artificial Intelligence: Ethical and Legal Issues (3 credits)
Prerequisite(s): INFO 265. Restriction(s): Business Administration Majors. We increasingly live in a data-driven society. Companies, organizations, and governments can collect and analyze a tremendous amount of data about individuals. Artificial intelligence algorithms can determine who gets a job, a mortgage, or health insurance. But these systems can reinforce existing biases. Thus, this course explores the ethical and legal issues in business analytics, such as data privacy, bias, algorithmic fairness, and more.

INFO 303 Prompt Engineering (3 credits)
Prerequisite(s): INFO 290. Restriction(s): Business Administration majors; Business Analytics majors; Accounting majors; Finance majors; Economics majors; Hospitality, Sports, Events, and Tourism majors; and Business Analytics minors. In the rapidly evolving landscape of artificial intelligence, prompt engineering has emerged as a critical skill for businesses seeking to leverage AI technologies effectively. This course introduces students to the art and science of crafting prompts for large language models (LLMs) and other AI systems. Students will learn how to design, refine, and optimize prompts to extract valuable insights, generate creative content, and solve complex business problems using AI tools. In this course, students will engage in hands-on projects that allow them to apply prompt engineering techniques to real-world business scenarios. The course also explores the ethical considerations and potential pitfalls of AI implementation in business contexts, equipping students with the knowledge to navigate the responsible use of these powerful technologies in their future careers.

INFO 306 Introduction to Web Development (3 credits)
Prerequisite(s): INFO 210. Restriction(s): Business Administration major. This course is designed to increase awareness and understanding of the movement to Web-based applications and enterprise-level management information systems as well as electronic commerce. This is a hands-on, lab-based Web page design course with significant exposure to the tools and requirements for the production of such systems. Students will learn to use a variety of development tools such as MS-Front Page, scripting languages such as JavaScript, VBScript and Perl and programming styles to develop both individually and in teams applications that simulate the realities of today's information systems and environment.

INFO 342 Information Technology Infrastructure (3 credits)
Prerequisite(s): INFO 290. Restriction(s): Business Administration major. This course is a survey of the many and varied hardware, software, service, and human resources that comprise the core of the information technology organization in the enterprise. The major resources are explained and their chief characteristics elaborated. Emphasis throughout the course is placed on the enterprise requirements for IT infrastructure and how each of these resources addresses each requirement. The infrastructure components are presented through the life cycle of resources: planning, selection, acquisition, implementation, operation, evaluation, and refresh.

INFO 351 Fundamentals of Project Management (3 credits)
Prerequisite(s): INFO 290. Restriction(s): Business Administration major. This course provides an overview of the tools, techniques, and methods used to manage business problems. The entire project life cycle-planning, implementation, control, and evaluation is addressed. Students are required to take the CAPM exam.

INFO 360 MIS Co-Op (3 credits)
Prerequisite(s): INFO 210 or INFO 342. Restriction(s): Business Administration major. This is an introductory cooperative educations course for students studying Management Information Systems. This course will integrate formal classroom study with a supervised full-time, or part-time off-campus employment experience. The purpose of this course is to develop self-awareness and to explore educational and occupational alternatives.

INFO 361 Information Technology Projects (3 credits)
Prerequisite(s): INFO 351 and; INFO 210 or INFO 342. Restriction(s): Business Administration major. This course provides students with the ability to use their accumulated information systems technology skills and knowledge to complete a real world project. These projects will be identified by the school or department and must include a major information systems component with an external organization.

INFO 363 Inferential Statistical Methods with Business Applications (3 credits)
Prerequisite(s): INFO 173, INFO 240, INFO 290 or departmental approval. This intermediate-level statistics course presents a thorough background in key inferential methods of data analysis used in business research. The course begins with an introduction to the process of business research through survey sampling and experimental design. Topics covered include tests for randomness, tests for goodness-of-fit, tests for association, and tests for differences in two or more groups in both a completely randomized setting and randomized block setting where the response variable is either numerical or categorical. Multivariate methods of inference are also developed in the completely randomized setting. Minitab, a statistical software package used to assist in data analysis is integrated throughout the course.

INFO 364 Regression Modeling in Business (3 credits)
Prerequisite(s): INFO 173, INFO 240, INFO 290 or departmental approval. Employing least-squares methods, this intermediate-level statistics course presents a thorough background in regression modeling used in business research and provides the underpinnings of predictive analytics in a world of Big Data. A model's assumptions are assessed through graphical residual analysis and confirmatory testing and refinements are made through variable transformations and influence analysis. Other methods of regression modeling of a numerical response variable, including LASSO, quantile regression, and regression trees are also introduced. Similarly, both classification tree methods and the logistic regression model used for predicting the probability of occurrence of some categorical phenomenon based on maximum likelihood methods are also presented. Minitab, a statistical software package used to assist in model building, is integrated throughout the course.

INFO 366 Managing Big Data and Cloud Computing (3 credits)
Prerequisite(s): INFO 210 and INFO 265. Restriction(s): Business Administration Majors, Business Analytics Majors, or Business Analytics Minors only. This course focuses on the management of "big data," the term given to the huge amounts of data that are routinely captured today as byproducts of business operations, transactions, and interactions on social networks. This data is warehoused in various forms in various databases, and designing the process by which data is extracted, transformed, and presented for analysis is key to successful and efficient analysis. Infrastructure choices including cloud computing, ELT vs ETL, and choice of language for distributed processing (Hadoop vs ECL/HPCC etc.) are discussed. With the popularity of Cloud Computing, often the data is stored in Cloud. Hence, cloud computing is essential part of this course.

INFO 367 Introduction to Data Mining (3 credits)
Prerequisite(s): INFO 257; and INFO 265 may be taken as prerequisite or corequisite. Restriction(s): Business Administration Majors, Business Analytics Majors, or Business Analytics Minors only. In this course students are introduced to analytical techniques for business decision making that are suitable for structured data. Training data, validation data, and out-of-sample validation data for model development and validation are discussed. Popular data mining techniques like decision trees, neural networks, and cluster detection are introduced. Students will use data mining software to analyze realistically large datasets to gain experience with these techniques.

INFO 390 Digital Transformation (3 credits)
Prerequisite(s): INFO 290. Restriction(s): Business Administration majors only. The business world is at the start of a new phase of technology innovation. This phase threatens to transform existing industries, markets, and companies. It is supercharged by the acceleration of digital connectivity, the enormous growth of data, and the reduction in the cost of computer power and digital storage. Those businesses that can embrace this transformation, to drive down costs, create new markets, and increase productivity will likely thrive. Those who do not or cannot embrace the transformation will likely wither. This class will examine how the emergence of new technologies is driving the transformation of businesses across almost every industry.

INFO 391 Blockchain Technology (3 credits)
Prerequisite(s): INFO 290. Restriction(s): Business Administration Major. As more industries adopt blockchain technologies, it is important to understand the underlying technology, business uses, and regulatory environment. This course builds a basic understanding of blockchain technology and its use in the business world. These uses include, but are not limited to, cryptocurrencies (such as Bitcoin), smart contracts, non-fungible tokens and distributed autonomous organizations.

INFO 395 Business Analytics and Artificial Intelligence Strategy (3 credits)
Prerequisite(s): INFO 265. Restriction(s): Business Administration Major. Increasing permeation of Artificial Intelligence (AI) across industries and organizations is reshaping the nature and structure of business competition. This course introduces students to the classical business strategy formulation frameworks. It also examines novel considerations and opportunities posed by AI technologies in business strategy formulation. Pedagogically the course focuses on examining current AI successes and challenges with the goal of shaping the students' appreciation for how AI is transforming business competition and how firms leverage AI-enabled capabilities for sustainable competitive advantage.

INFO 401 Text Mining (3 credits)
Prerequisite(s): INFO 367. Restriction(s): Business Administration Majors, Business Analytics Majors, or Business Analytics Minors only. In this course students are introduced to analytical techniques for business decision making that are suitable for unstructured data (text, video, audio, etc.). Training data, validation data, and out-of-sample validation data for model development and validation are discussed. The focus of the analytical techniques is on text-mining, but related issues like natural language processing, context analysis, and situational awareness are also discussed. Students will use appropriate data-mining software to analyze realistically large datasets to gain experience with these techniques. Equivalent course INFO 368 effective through Summer 2023.

INFO 414 Information Security System Management (3 credits)
Prerequisite(s): INFO 210. Restriction(s): Business Administration Major. This course provides students an overview of the development, applications and management of information security (IS), business continuity (BC), and disaster recovery (DR) systems in business. Students are given a series of hands-on exercises and projects to practice skills in IS-BC-DR administration, designing, and related infrastructure planning. This course also introduces strategic concerns of local, cyber security administration along with cloud based IS-BC-DR concepts, issues and trends for all businesses.

INFO 416 Business Process Analysis and Enterprise Systems (3 credits)
Prerequisite(s): INFO 300. Restriction(s): Business Administration major. This course provides an in-depth exploration of the design, development, use, control, and maintenance of business processes. Emphasis is placed on the impacts of processes on the effectiveness and efficiency of business operations through business process engineering. Enterprise Resource Planning systems (ERP) are analyzed as attempts to integrate a consistent set of process across an organization.

INFO 470 Electronic Commerce: Creating Business Value Using Information Technology (3 credits)
Prerequisite(s): INFO 290. Restriction(s): Major within the School of Business and Information Technology majors only. This course is designed to provide the student an understanding of the consequences of the introduction of the Internet and the World Wide Web in the way business is conducted. The electronic commerce world is viewed primarily from the point-of-view of MIS. That is, the managerial issues related to the information infrastructure requirements are mainly attended to. Both individuals and organizations have been profoundly affected by related network technologies that have since permutated in form ever since the convergence of advanced communications and information infrastructure and the cable, telephone, television, and telecommunications industries. The student will learn about new forms of business practices in business-to-business, consumer-to-business, and intraorganizational transactions. Specifically, activities in the areas of electronic shopping, publishing, distribution, and collaboration will be explored. The following issues that have arisen as a result of electronic commerce (EC) will be explored: security, authentication, privacy, data encryption, intellectual property rights, freedom of expression using electronic media, fair use policies, legal liabilities, etc. Students will also learn about new organizational forms such as the "virtual" firm that are emerging as a result of EC.

INFO 476 Data Mining for Business (3 credits)
Prerequisite(s): INFO 240 or departmental approval. Restriction(s): Business Administration major. This course is concerned with data mining concepts and techniques and is designed as a practical introduction to the growing field of Data Mining. This powerful set of analytic techniques is becoming increasingly popular as an information management tool designed to guide decisions under conditions of limited certainty across such diverse fields as marketing, finance, economics, education, epidemiology, psychology, sociology, as well as many others.

INFO 488 Business Application with Artificial Intelligent (AI) Systems (3 credits)
Prerequisite(s): INFO 290. Restriction(s): Business Administration major. The course will cover the following topics: knowledge acquisition techniques, knowledge representation, inferencing, case-based reasoning, industrial application, uncertainty issues.

INFO 491 Independent Study in Information Systems (3 credits)
Prerequisite(s): Departmental approval; and INFO 290. Restriction(s): Business Administration major. A student, under the guidance of a faculty advisor, will conduct an in-depth study on a current topic in information systems. A project report or a research paper will be produced after this study. May be repeated once for a maximum of 6 credits as long as the topic is different.

INFO 492 Special Topics in Information Systems (1-3 credits)
Prerequisite(s): INFO 290 and departmental approval. Restriction(s): Business Administration major. This course covers the topics in the design, implementation, and applications of information systems. The topics also include various information technologies and their applications. The course may be repeated for credit as long as the "special topic" in each course differs from topics previously taken. May be repeated once for a maximum of 6 credits as long as the topic is different.

INFO 495 Business Analytics Capstone Practicum (3 credits)
Prerequisite(s): INFO 401 may be taken as a prerequisite or corequisite. Restriction(s): Business Administration Majors, Business Analytics Majors, or Business Analytics Minors only. In this capstone practicum, students will work on a collaborative group project that addresses, ideally, a live business problem using the analytical techniques learned in the other courses comprising this major. Students will clearly articulate the business problem and the goals of their chosen analytical approach. They will have access to realistically big data, and an opportunity to appreciate, through application, the possibilities and limitations of these analytical techniques. Students will be expected to understand and communicate the business implications of their analysis to interested stakeholders. Equivalent course INFO 495 effective through Summer 2023.

INFO 496 Advanced Systems Analysis and Design (3 credits)
Prerequisite(s): INFO 257. Restriction(s): Business Administration major. This course is an advanced (capstone) project-oriented exposition of the Management of Information Technology (MIT) knowledge to application system development process. Emphasis is placed on information analysis and the logical specification of the system and project management. Systems development life cycle (SDLC), systems development process and systems development tools, etc., are covered. The student is guided to develop a formal design document as a project.

INFO 551 Supply Chain Modeling and Analysis (1.5 credit)
This course exposes students to the basic issues that need to be considered in designing and operating supply chains and a variety of modeling tools available for their analysis. Emphasis will be on application and development of mathematical modeling techniques for the analysis of strategic, tactical and operational supply chain problems including inventory management, aggregate planning, distribution and facility location, supply contracts and coordination among supply chain partners. Other related topics to be covered include various critical concepts and strategies such as risk pooling, information sharing, and the role of information systems in supply chain management.

INFO 552 Logistics and Distribution Management (1.5 credit)
This course provides a detailed exploration of logistical functions and distribution management within the supply chain. Covering topics from the fundamentals of supply chain logistics to advanced distribution strategies, it delves into integrated operations planning, network design, facility location, transportation management, and warehousing. Combining theoretical foundations with practical exercises, this course is designed to equip students with the knowledge and skills necessary to optimize logistics and distribution processes, thereby enhancing the overall efficiency and effectiveness of supply chains.

INFO 553 Global Procurement and Sourcing (1.5 credit)
This Global Procurement and Sourcing course provides an in-depth understanding of the strategies, processes, and best practices essential for effective global procurement. Students will learn how to evaluate and select suppliers, manage international supply chains, and negotiate contracts across diverse cultural and regulatory landscapes. The course covers topics strategic sourcing, supplier selection and management, supply market analysis, and procurement negotiations. Through case studies and practical exercises, students will gain the skills to optimize sourcing strategies and contribute to the competitive advantage of their organizations in a global marketplace.

INFO 554 Demand Forecasting and Planning (1.5 credit)
This comprehensive Demand Forecasting and Planning course is designed to equip students with the essential knowledge and skills to accurately predict and manage demand in various business environments. The curriculum provides a balanced blend of theoretical concepts and practical applications, ensuring that students can apply their learning effectively in real-world scenarios. This course is ideal for individuals seeking to advance their supply chain management, operations planning, and supply chain analytics careers.

INFO 555 Supply Chain Risk Management (1.5 credit)
This course provides an overview of risk management in business and supply chain management. Both qualitative and quantitative approaches are employed to demonstrate risks arising from echelons of the supply chain, including production, transportation, and retailing.

INFO 556 Sustainability in Supply Chains (1.5 credit)
The Sustainability in Supply Chains course aims to provide students with an understanding of the sustainability challenges and opportunities facing supply chains today. The course covers topics on sustainable warehousing, sustainable procurement, reverse logistics, corporate social responsibility, and circular economy. Both qualitative and quantitative approaches are introduced.

INFO 561 Business Statistics (1.5 credit)
This course offers an introduction to essential statistical concepts for business analytics. Covering Descriptive Statistics, Probability Distributions, Confidence Intervals, Hypothesis Testing, Linear and Logistic Regression, and Analysis of Variance, it provides the skills necessary for effective data-driven decision-making in diverse business settings. Hands-on experience with data analysis and visualization software is integrated throughout the course.

INFO 562 Operations Management Analysis (1.5 credit)
This course offers a strategic exploration of key facets crucial to optimizing and managing organizational performance, efficiency, and quality through analytical tools and methodologies. The course encompasses a diverse array of topics essential for effective operations management, such as process optimization, quality, and decision risk analysis. This course aims to help students develop a profound understanding of operational intricacies, empowering them to make informed decisions and navigate complexities in a dynamic business landscape.

INFO 563 Information Systems Strategy and Innovation (3 credits)
This course provides students with a fundamental understanding of the roles that information technology and technology innovation play in providing the tools and resources for developing new products, business models, and companies and supporting business strategy. This course focuses on the strategic management of technology and innovation in the firm. The purpose is to provide students with concepts, frameworks, and experiences that are useful for taking part in the management of innovation processes in the design and implementation of IT systems.

INFO 564 Supply Chain Management (1.5 credit)
This course develops an understanding of the strategic role of a supply chain, key strategic drivers of supply chain performance, analytical methodologies for supply chain analysis and the decision processes involved in designing and effectively managing a supply chain. A supply chain consists of various participants—suppliers, manufacturers, distributors, retailers, and even customers—all collaborating to meet customer demands. The activities in a supply chain range from tactical decisions such as demand forecasting, inventory management and transportation to strategic decisions such as network design & planning. This course introduces high-level strategy and concepts while giving the students the analytical tools to solve supply chain (SC) problems. Using a strategic framework, this course covers the key performance drivers, including facilities, inventory, transportation, sourcing and sustainability.

INFO 565 Strategic Information Systems (1.5 credit)
This course provides students with a fundamental understanding of the role that information systems plays in supporting business strategy. This course focuses on the strategic management of technology in the firm. The purpose is to provide students with concepts, frameworks, and experiences that are useful for taking part in the management, design and implementation of IT systems. The course examines a wide range of information systems topics. These include technology governance, systems development, information systems impact on business models and decision making, implications of emerging technologies, leveraging the Internet, and security issues in the deployment of information systems. The course addresses these topics through a managerial, applications-oriented perspective. It emphasizes aligning information systems strategically to the goals of business to gain competitive advantages.

INFO 566 Business Analytics and AI (1.5 credit)
This course aims to equip future business leaders with the essential analytics and artificial intelligence skills to harness the vast potential of data for informed decision-making and strategic planning. Through a hands-on approach, students will explore the entire data lifecycle, from acquisition and preprocessing to modeling and interpretation. Topics covered include data exploration, predictive modeling, machine learning, and artificial intelligence, with a focus on practical applications in real-world business scenarios. By the end of the course, students will be adept at leveraging data-driven insights to enhance organizational performance, optimize decision processes, and gain a competitive edge in the complex landscape of modern business.

INFO 570 Data Wrangling and Analysis (3 credits)
Restriction(s): MBA, MS Business Analytics, MS Human Resource Analytics, or Certificate students only. This course focuses on data processing and explanatory data analysis. Topics covered include feature creation & extraction from structured and textual data, imputation, handling outliers, computing descriptive statistics, organizing and visualizing variables, and building preliminary predictive models. A statistical programming language (e.g., R or Python) is used in this course.

INFO 572 Business Requirements Analysis (1.5 credit)
Prerequisite(s): MGMT 565 or by permission of the MBA Office. Restriction(s): MBA degree students or graduate Project Management Certificate students only. This course will concentrate on these essential activities and associated skills: 1) conducting a feasibility analysis (business case) for the proposed project; 2) analyzing customer needs and converting them into specific requirements using a variety of methods such as use cases, user stories, piloting, and other elicitation techniques to develop business, functional, and non-functional requirements; 3) working with project managers and teams to properly define, implement, and control scope; 4) managing change and conducting quality assurance and control activities validating during implementation; and 5)validating scope and work with customers to achieve sign-off. This course will also introduce a variety of tools, techniques, and methods of business requirement analysis that apply to both predictive and adaptive methods of project implementation. Insights on good and best practices for managing projects, especially the larger and more complex projects are presented throughout the course. This course is for individuals aspiring to be business analysts or project managers.

INFO 573 Practicum in E-Commerce (1.5 credit)
Restriction(s): MBA degree students, MS Digital Marketing Analytics students, or graduate Digital Marketing Certificate students only. This course is designed to provide the student a practical understanding of the consequences of the introduction of the Internet and the World Wide Web in the way business is conducted. The aim of the course is to provide a hand on understanding of how to establish and run an online business. Students will learn about the importance of Web-based commerce by participating in it. The course will address issues such as online market research, building an effective Web presence, search engine marketing, and leveraging the use of other current techniques to drive traffic to a Website.

INFO 574 Database Systems and Management (3 credits)
Restriction(s): MS in Business Analytics and MBA students only. This course aims to provide students with an overview of the development, applications, and management of database systems in the business analytics domain. This course employs cutting-edge tools that allow students to obtain skills in database design, management, and applications as well as data extraction using Structured Query Language (SQL). Additionally, this course introduces concepts of database administration, security, and non-relational databases.

INFO 575 Independent Study in Information Systems for Business (1-3 credits)
Restriction(s): MBA degree students only; Departmental approval. Under faculty guidance and supervision, this tutorial course is open to students who wish to pursue individual study and research in a particular discipline. May be repeated once for a maximum of 6 credits as long as the topic is different.

INFO 577 Special Topics in Information Systems for Business (1-3 credits)
Restriction(s): Masters in Business Analytics and MBA degree students only; Departmental approval. An in-depth study of a selected topic, issue, problem or trend in information systems for business. The specific subject matter is not offered as an existing regular course or deserves more time-emphasis than is possible in a regular course. May be repeated eight times for a maximum of 12 credits as long as the topic is different.

INFO 579 Agile Systems Development Management (1.5 credit)
Restriction(s): MBA degree students or graduate Project Management Certificate students only. Reducing cycle-time to bring products to the market in a shorter time has been the driving challenge for product development teams. Increasing economic pressures due to globalization, shrinking markets, commoditization, and competition, has made this challenge a reality and not an option any more. Managing this reality without compromising the product quality and performance requires an agile systems development and management approach. Agility includes flexibility, adaptability, and nimbleness in business processes, systems design and development, manufacturing, and strategy. This course is designed to provide the students an ability to understand the methods, processes, and tools for managing agile systems design and development projects.

INFO 581 Business Processes for Analytics (3 credits)
Prerequisite(s): INFO 570. Restriction(s): MS in Business Analytics students only. This course offers a foundational understanding of essential business processes in the context of analytics. The aim of this course is to equip students with the skills to extract valuable insights from event logs and historical data, uncover inefficiencies, and identify opportunities for optimization to continuously improve business processes. Students will have an opportunity to work on hands-on exercises and real-world case studies through a project or fieldwork. They will gain proficiency in process discovery, conformance checking, and enhancement, enabling them to contribute to streamlined operations, enhanced decision-making, and increased efficiency within businesses. Students will also learn how to identify data requirements vital for designing efficient processes and apply tools and methodologies to manage analytics lifecycle effectively.

INFO 582 Optimization Methods (3 credits)
Prerequisite(s): INFO 570. Restriction(s): MS in Business Analytics students only. In today's data-driven business landscape, organizations seek to maximize efficiency, minimize costs, and make informed decisions. This Optimization for Business Analytics course is designed to equip students with the fundamental skills required to tackle complex problems and optimize solutions in various business contexts. This course will cover a wide range of optimization techniques, including linear programming, integer programming, network optimization, nonlinear optimization, and simulation. Students will learn how to model real-world business problems as optimization challenges, formulate objective functions and constraints, and leverage optimization tools and software to find optimal solutions.

INFO 583 Data Mining for Business (3 credits)
Prerequisite(s): INFO 570; and INFO 561 or INFO 589. Restriction(s): MBA, MS in Business Analytics, MS in Digital Marketing Analytics, MS in Human Resource Analytics, and Certificate Students only; other programs permitted with department approval. The course provides a hands-on introduction to data mining applications across di#erent business scenarios. Students learn and apply supervised and unsupervised machine learning techniques to solve business cases. Students learn how to communicate the analytical insights that emerge from data mining to di#erent stakeholders. Students develop awareness of ethical implications of data mining for business purposes.

INFO 584 Data Visualization (3 credits)
Restriction(s): MBA, MS in Business Analytics, MS in Digital Marketing Analytics, or MS in Human Resource Analytics students only, or departmental approval. This course equips students with the essential skills to transform complex data into insightful visual narratives. In an era where data-driven decision-making is paramount, this course empowers students to leverage cutting-edge tools and techniques to create compelling visual representations of data. Through hands-on practice and theoretical insights, students will learn to design and communicate data-driven stories effectively, enabling them to make impactful presentations and drive informed business strategies. Whether you aspire to be a data analyst, business intelligence professional, or data scientist, this course will provide you with the critical skills needed to excel in the dynamic world of data visualization and analytics.

INFO 585 Advanced Data Mining for Business (3 credits)
Prerequisite(s): INFO 583. Restriction(s): MBA, MS in Business Analytics, MS in Digital Marketing Analytics, or MS in Human Resource Analytics students only. The advanced data mining for business course delves into the intricacies of harnessing data for insightful business analytics. It covers cutting-edge techniques in data acquisition and preprocessing, with a particular emphasis on handling unstructured data effectively. The course explores the power of text mining and natural language processing, enabling students to unlock valuable knowledge and insights from textual data sources. Students will also gain hands-on experience in applying these advanced methods to real-world business challenges, equipping them with the skills needed to drive data-driven decision-making in modern enterprises.

INFO 587 Artificial Intelligence for Business (3 credits)
Prerequisite(s): INFO 583. Restriction(s): MS in Business Analytics students only. This course provides a comprehensive exploration of the latest advancements in AI technology and their practical applications in the business world. Students will delve into cutting-edge tools, methodologies, and ethical considerations, equipping them to deliver responsible and effective AI solutions that drive business performance. Topics covered include deep learning algorithms, generative models, reinforcement learning, and their applications in creating autonomous systems. Additionally, students will examine the challenges associated with AI, including issues of explainability and transparency, fostering a holistic understanding of AI's responsible and ethical usage in a business context.

INFO 588 Analytics Capstone (3 credits)
Prerequisite(s): INFO 583 and INFO 584. Restriction(s): MS in Business Analytics, MS in Digital Marketing Analytics, and MS in Human Resources Analytics students only. The Business Analytics Capstone course serves as a culminating experience, providing students with an opportunity to apply and integrate the knowledge, skills, and tools acquired throughout their coursework. In this advanced and hands-on course, students will tackle real-world business challenges posed by industry partners, leveraging data analytics to develop innovative solutions and actionable recommendations. Working in interdisciplinary teams, students will engage in data-driven decision-making, advanced statistical analysis, predictive modeling, and data visualization to address complex problems across diverse domains. Throughout the capstone experience, students will not only hone your technical skills but also develop critical teamwork, communication, and project management abilities.

INFO 589 Applied Business Statistics (3 credits)
Restriction(s): MS in Business Analytics, Digital Marketing Analytics, Human Resources Analytics, GR certificate in Business Analytics only. This course is aimed at providing analytics students with a knowledge of statistical concepts and methods that are needed to perform important business functions requiring data analysis, such as hypothesis testing, business forecasting, trend analysis, and exploring patterns and hidden opportunities. The focus is on using the tools and techniques to extract useful information out of data and to make correct interpretations, rather than their mathematical structure or derivation. Hands-on exercises will be used to reinforce learning by taking advantage of various statistical analysis software tools.

INFO 591 Analytics Internship (3 credits)
Prerequisite(s): INFO 583 and INFO 584. Restriction(s): MS in Business Analytics, MS in Digital Marketing Analytics, and MS in Human Resources Analytics students only. This course provides students with an experiential learning opportunity and helps them gain practical skills through solving real business problems through fieldwork/internship. Students will work in an industry of their choice (i.e., healthcare, pharmaceutical, manufacturing, tech) to better understand business analytics. Students will understand different data types and common problems in their chosen industry. Students will also be expected to identify a problem for which they can develop an effective solution strategy by utilizing analytics tools and methodologies.

INFO 592 Analytics Research in Industry (1 credit)
Prerequisite(s): INFO 583 and INFO 584. Restriction(s): MS in Business Analytics. This course offers a deep dive into the practical application of analytics in real-world industry settings. Students will explore the latest research methodologies, tools, and case studies to understand how analytics drives innovation and decision-making across various sectors. In this course, students will either create a white paper describing the application areas of analytics in different sectors or engage in hands-on projects through fieldwork/internship experiences. The course will equip students with the expertise to bridge the gap between cutting-edge analytics research and its practical implementation in the corporate world.

INFO 593 Analytics Seminar - Career Transition (0 credits)
Prerequisite(s): INFO 583 and INFO 584. Restriction(s): MS in Business Analytics only. This course aims to serve as a culminating experience allowing students to successfully transition to careers in analytics fields. During this seminar experience, students attend workshops and meet with analytics practitioners from various industry sectors to understand how analytics theory can be used in practice. This seminar experience also help students how to tailer their resumes and look for analytics jobs in the labor market through workshops, seminars, and industry practitioner/executive speaker series.

INFO 595 Advanced Digital Marketing Analytics (3 credits)
Prerequisite(s): INFO 583 and MKTG 585. Restriction(s): Graduate students in the Feliciano School of Business. This course is an intermediate to an advanced course that presumes solid familiarity with statistics, the basics of data analytics, and primary marketing concepts and theories. This course provides students with hands-on experience in preprocessing and analyzing various marketing datasets using different platforms. This course covers numerous applications of data analytics to the marketing field, such as understanding customer lifetime value, customer acquisition, and growth, measuring customer preferences, building recommender systems with personalization, advertising, retention and churn, social media influence, and discovering customer needs.