Business Analytics (BUSAN)

Courses

BUSAN 220. Introduction to Business Statistics. 3 Credits.
The course prepares students to examine descriptive statistics, sampling and sampling distributions. Students will become proficient in analyzing statistical data and interpreting descriptive statistics results.
P: Freshman standing. REC: Freshman standing
Fall and Spring.

BUSAN 230. Spreadsheet and Information Systems. 3 Credits.
This course presents an overview of information concepts through a variety of quantitative problem-solving experiences using Microsoft Excel. Introductory business and statistical models are examined, as students identify appropriate ways to find, evaluate, and use the information for decision-making. The course also discusses the management of information and technology within organizational environments. Content explores the role of information and technology solutions in the management of operations and innovations.
Fall and Spring.

BUSAN 320. Advanced Business Statistics. 3 Credits.
This is an advanced course built on BUSAN 220. It revises the contents of BUSAN 220 and prepares students to do advanced statistical analyses such as hypothesis testing, independent and paired t-tests, analysis of variance, regression, chi-square, and variance comparisons. The course will also expose students to statistical applications such as SPSS.
P: BUSAN 220
Fall Only.

BUSAN 370. Data Science for Managers. 3 Credits.
The course helps students understand the fundamentals of using data to support their decision-making and to visually represent data. Students will develop visualization and decision models designed to effectively communicate the meaning of complex data sets in a business context. Students will also learn how Business Intelligence (BI) is used by organizations to make better business decisions, use fewer resources, and improve the bottom line. Students will learn numerous in-demand technical skills
P: Sophomore standing
Fall and Spring.

BUSAN 435. Foundations of Strategic Information Management. 3 Credits.
Information Technology (IT) is an integral part of all organizations and plays a vital role in all functional areas such as marketing, accounting, finance, human resources, operations, and supply chain. It also serves in enabling key applications such as business intelligence, data analytics, security, internal controls, and new-product planning among others. Owing to the dynamic nature of IT, it is imperative that organizations continuously reevaluate their strategic alliance with IT. Thus a well-designed, and strategically managed IT has the potential to dramatically improve a business's competitive advantage. The course discusses the significant managerial aspects of IT's increasing impact on today's organizations, along with IT trends and their business implications, security, privacy and ethical issues.
P: BUSAN 230 or Business Analytics Emphasis
Fall and Spring.

BUSAN 436. Analysis & Design of Business Information Systems. 3 Credits.
The competence in business information systems analysis and design (SA&D) is critical to not only information technology professionals but also to business managers since the fit between information technology and organizational business needs is argued to be a key determinant of firm performance. Students will learn system analysis and design concepts and technologies required to develop business information systems. The emphasis is on system life cycle concepts ranging from a system's planning to its discontinuance. The course will also attempt to evaluate the ethical issues involved as well as the business reasons why some IT projects succeed while others fail.
P: BUS ADM major or minor or ACCTG major or minor and an overall minimum GPA of 2.5.
Fall Only.

BUSAN 450. Database for Business Analytics. 3 Credits.
Data is the new oil and is a key component of powering the AI and analytics revolution. Any analytical solution and decision model system is only as good as the data it is built upon. This course provides a comprehensive introduction to managing data using database management systems (DBMS). It consists of four main parts - database design, implementation, and use - focusing on the relational database model and introducing big data technologies such as NoSQL databases, data warehousing, and data lakes. The course will also discuss how better data integration using data lakes and other big data technologies can help break data silos and create a vibrant learning organization. Course is repeatable for credit; may be taken 2 times to earn a total of 6 credits. This course has been identified as a Cofrin School of Business High Impact Practice (HIP) course. HIPs are rigorous courses that include engaging teaching methods such as regular feedback, peer and faculty interaction, structured reflection, and application of knowledge.
Fall Only.

BUSAN 452. Business Analytics. 3 Credits.
This course focuses on concepts pertaining to business analytics and its application in the business environment using various techniques. Upon completing this course, the student will gain knowledge of data summarization and visualization, as well as descriptive and predictive data analytics in decision-making. The course covers various topics such as data description, data visualization, regression, classification, and other analytical models. Students will also be expected to learn how to apply analytical methods to business problems through performing hands-on examples and projects over the course of the semester using statistical packages such as R. This course has been identified as a Cofrin School of Business High Impact Practice (HIP) course. HIPs are rigorous courses that include engaging teaching methods such as regular feedback, peer and faculty interaction, structured reflection, and application of knowledge.
P: BUSAN 220 or MATH 260; and BUSAN 230 and Bus Adm major or minor or Acctg major or minor and an overall minimum GPA of 2.5
Fall and Spring.

BUSAN 453. Machine Learning for Business Analytics. 3 Credits.
Machine Learning is increasingly used in applications ranging from product recommendations and business forecasting to health care diagnosis and autonomous driving. This course is aimed at developing practical machine learning and data science skills. The course will cover different principal models used in machine learning and the types of problems to which they are typically applied. Students will learn to apply the principal models in machine learning to solve business problems. We will cover the main models from both supervised learning and unsupervised learning. Finally, we will also discuss the important question of model evaluation and selection, highlighting the biases and ethical issues inherent in machine learning.
Spring.

BUSAN 464. Data Visualization and Storytelling. 3 Credits.
This course discusses the art and science of turning data into readable graphics. Students will learn to evaluate the effectiveness of visualization based on principles from graphic design, visual art, perceptual psychology, and cognitive science. Students will also learn to think critically about each design decision, such as choice of color and choice of visual encoding. Students will create their own data visualizations, and learn to use Tableau. Finally, students will learn to tell engaging data stories that clearly depict the points that they want to make through data visualization.
P: BUSAN 220 or MATH 260; BUSAN 230 and an overall minimum GPA of 2.5
Spring.