Business Analytics (BUAN)

Courses

BUAN 044 (BIS 044) Business Analytics I 1.5 Credit
This course covers the basic concepts of data, including the collection, organization, exploration, and understanding of data with an emphasis on complex business data. The focus is on data as an organizational asset, and how data is structured for use in business to optimize business decisions and processes. Students will implement data analytic techniques through hands on programming.

BUAN 244 (BIS 244) Business Analytics II 1.5 Credit
This course covers techniques and algorithms for creating effective visualizations of complex business data. The emphasis will be on the use of data visualization in business decision making. Students will implement data analysis and visualization through hands on programming and visualization tools.
Prerequisites: (BUAN 044 or BIS 044) and (ECO 045 or MATH 231 or ISE 121)

BUAN 315 Introduction to Generative AI 3 Credits
This course offers a dynamic introduction to Generative AI in business, tailored for non-technical students. Using a no-code approach, students will learn Generative AI concepts, practical business applications, and prompt engineering. The course also addresses the ethical implications of AI, empowering students to use GenAI tools effectively and responsibly. This course prepares students for future careers and lays the foundation for understanding Generative AI.
Prerequisites: BIS 111

BUAN 346 Python Applications for Business 3 Credits
This class is designed to introduce students to the processes involved in acquiring, cleaning, arranging, analyzing, and visualizing business data using the Python programming language. It will be fast-paced, but assumes only a basic familiarity with coding, and requires no specific expertise in Python to start. Students cannot receive credit for both BUAN 346 and BIS 446.
Prerequisites: BIS 111 or BUAN 044 or BIS 044

BUAN 348 Predictive Analytics in Business 3 Credits
The course covers theories and practices in predictive analytics in business. Students will have hands-on experience on analyzing business data for business intelligence and improved business decision making. Includes: key theories, concepts, and models of predictive analytics; and data mining tools to formulate and solve business problems. The course uses data analytics software and real data. Topics include prediction, forecasting, classification, clustering, data-visualization and data reduction techniques. Not available to students who have credit for BIS 448 or BIS 456.
Prerequisites: (BUAN 044 or BIS 044) and (ECO 045 or MATH 012 or MATH 231)

BUAN 352 Business Analytics and Modelling 3 Credits
This course covers advanced analytic methods for understanding and solving business problems. The emphasis is on understanding and applying a wide range of modern techniques to specific decision-making situations. Using the programming language R, the course covers advanced topics such as machine learning, text mining, and social network analysis. Upon completion, students will have valuable practical analytical skills to handle large datasets and make business decisions. Credits will not be given for both BUAN 352 and BIS 452.
Prerequisites: (BUAN 044 or BIS 044) and (ECO 045 or MATH 012 or MATH 231)

BUAN 357 Artificial Intelligence for Business 3 Credits
This course covers fundamental concepts of artificial intelligence (AI) and how it is applied to solve business problems, to increase business value, transform businesses and to gain competitive advantage. A brief technical overview will be covered. Common machine learning (ML) algorithms will be covered and students will have hands-on experience with AI tools/frameworks. Example use cases of these ML algorithms in various business functional areas will be examined. Finally, ethical challenges in the AI context will be explored.
Prerequisites: (ECO 045 or MATH 012 or MATH 231) and (BUAN 044 or BIS 044 or CSE 002 or CSE 012 or CSE 007 or CSE 003)

BUAN 368 AI Strategy and Management 3 Credits
This course explores the strategic implications of artificial intelligence (AI) in the modern business landscape. Students will learn how to integrate AI into organizational strategy to drive innovation, improve efficiency, and gain a competitive edge. Key topics include understanding AI technologies, aligning AI with business goals, ethical considerations, risk management, and the role of AI in digital transformation. Through case studies, practical applications, and hands-on projects, students will develop the skills needed to design and implement AI strategies.
Prerequisites: BIS 111

BUAN 371 DIRECTED READINGS 1-3 Credits
Readings and research business analytics; designed for superior students who have special interest in some topic(s) not covered by the regularly scheduled courses. Written term paper(s) required. Must have preparation in business analytics acceptable to program coordinator.
Repeat Status: Course may be repeated.

BUAN 372 Special Topics in Business Analytics 1-3 Credits
Special problems and issues in business analytics for which no regularly scheduled course work exists. When offered as group study, coverage varies according to interests of the instructor and students. Must have preparation in business analytics acceptable to program coordinator.
Repeat Status: Course may be repeated.

BUAN 373 Business Analytics Internship 1-3 Credits
Based on a student's work experience, a sponsoring faculty member shall direct readings, projects, and other assignments-including a "capstone report." It should be noted that the work experience (at least 80 hours per credit), by itself, is not the basis for academic credit. The faculty directed activity must be provided concurrent with the work. Course registration and related arrangements, including designating a sponsoring faculty member, must be made in advance of the work engagement. This course must be taken Pass/Fail.
Repeat Status: Course may be repeated.

BUAN 415 Introduction to Generative AI 3 Credits
This course offers a dynamic introduction to Generative AI in business, tailored for non-technical students. Using a no-code approach, students will learn Generative AI concepts, practical business applications, and prompt engineering. The course also addresses the ethical implications of AI, empowering students to use GenAI tools effectively and responsibly. This course prepares students for future careers and lays the foundation for understanding Generative AI.

BUAN 446 Python Applications for Business 3 Credits
This class is designed to introduce students to the processes involved in acquiring, cleaning, arranging, analyzing, and visualizing business data using the Python programming language. It will be fast-paced, but assumes only a basic familiarity with coding, and requires no specific expertise in Python to start. Students cannot receive credit for both BUAN 346 and BUAN 446.

BUAN 448 Predictive Analytics in Business 3 Credits
The course covers theories and practices in predictive analytics in business. Students will have hands-on experience on analyzing business data for business intelligence and improved business decision making. Includes: key theories, concepts, and models of predictive analytics; and data mining tools to formulate and solve business problems. The course uses data analytics software and real data. Topics include prediction, forecasting, classification, clustering, data-visualization and data reduction techniques. Not available to students who have credit for BUAN 348 or BIS 456.

BUAN 452 Business Analytics and Modelling 3 Credits
This course covers advanced analytic methods for understanding and solving business problems. The emphasis is on understanding and applying a wide range of modern techniques to specific decision-making situations. Using the programming language R, the course covers advanced topics such as machine learning, text mining, and social network analysis. Upon completion, students will have valuable practical analytical skills to handle large datasets and make business decisions. Credits will not be given for both BUAN 352 and BUAN 452.
Prerequisites: ECO 045 or BUEC

BUAN 457 Artificial Intelligence for Business 3 Credits
This course covers fundamental concepts of artificial intelligence (AI) and how it is applied to solve business problems, to increase business value, transform businesses and to gain competitive advantage. A brief technical overview will be covered. Common machine learning (ML) algorithms will be covered and students will have hands-on experience with AI tools/frameworks. Example use cases of these ML algorithms in various business functional areas will be examined. Finally, ethical challenges in the AI context will be explored.
Prerequisites: BUAN 446

BUAN 468 AI Strategy and Management 3 Credits
This course explores the strategic implications of artificial intelligence (AI) in the modern business landscape. Students will learn how to integrate AI into organizational strategy to drive innovation, improve efficiency, and gain a competitive edge. Key topics include understanding AI technologies, aligning AI with business goals, ethical considerations, risk management, and the role of AI in digital transformation. Through case studies, practical applications, and hands-on projects, students will develop the skills needed to design and implement AI strategies.