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### Business Analytics

The Bachelor of Science (B.S.) in Business Analytics prepares students for applying data analytics skills, artificial intelligence and machine learning knowledge to strengthen business strategies. Students will understand business and its environment, goals and strategies, recognize and understand business problems, develop questions and models for analysis, use of structured and unstructured data, business analytical techniques, artificial intelligence and machine learning skills to analyze and solve business problems, improving goals and making better decisions for the future.

A major in Business Analytics requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for the Business Analytics major, and students must earn a minimum 2.0 grade point average for those major courses. For Business Analytics majors, Business Analytics courses completed more than seven calendar years prior to the current term must be repeated.

### Bachelor of Science (B.S.) in Business Analytics Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Professional Business Core	47
Requirements for Major in Business Analytics (Minimum grade of C required for all classes in major area) BSAN 401, BSAN 402, BSAN 403, BSAN 404, BSAN 405, BSAN 406, BSAN 407, MGMT 360, MGMT 420, and MGMT 421	30
Electives (Any additional hours of college-level credit can be used) <sup>1</sup>	4
Total	120

<sup>1</sup> 120 semester hours are required for graduation. Any additional hours of college level credit can be used to equal minimum 120 semester hours required for degree.

### Capstone Option for Transfer Students

The Capstone Option is available to students who have earned an Associate in Applied Science (A.A.S.) degree or have the equivalent certification and who have a cumulative 2.0/4.0 GPA on all accredited coursework prior to the completion of the A.A.S. or certification, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. Students who apply for the Capstone Option will work with the College of Business Advisement Office for approval of the Capstone Option and will complete a personal contract for a degree completion plan.

## Differential Tuition

The College of Business assesses differential tuition for College of Business majors. The College of Business has a “minor program fee” for majors outside of the College of Business that want to declare a minor through the College of Business. The minor program fee is equal to 15% of 15 credit hours of applicable tuition for declared College of Business minors.

## Business Analytics Courses

The Bachelor of Science degree program with a major in Business and Administration is an online degree program intended for those students residing outside the Carbondale community or who have work and/or family commitments that make traditional campus attendance impractical.

**BSAN401 - Business Intelligence** This course is an introduction to data-based decision making in business. It examines business problems and the sources of data, applications, infrastructure, tools, and best practices in business intelligence. This course includes information gathering, management, retrieval, and processing to optimize decisions and performance. Credit Hours: 3

**BSAN402 - Data Science I** Introduction to data science. This course introduces the student to the process of data science from data gathering, to data exploration, to data modeling, to communicating the results. Emphasis is on business data and its application to business decision making. Introduction to data science tools and techniques. Prerequisite: BSAN 401 with a grade of C or better. Credit Hours: 3

**BSAN403 - Data Science II** Advanced data science. Extensive exploration of data and its role in organizations. Analysis of large amounts of structured data as well as big data such as text, video, audio, and social media. Use of current analytics tools and techniques for applied data analysis and critical evaluation of next generation statistical techniques. Prerequisite: BSAN 402 with a grade of C or better. Credit Hours: 3

**BSAN404 - Artificial Intelligence in Business** An introduction to artificial intelligence and expert systems and their application to business problems. We explore and implement AI: expert systems, neural nets, and deep learning systems. These systems are becoming critical to organizations as they try to cope with a rapidly changing world that is forcing them to make faster data-based decisions. This course will cover the history, promises, limitations, and future directions of artificial intelligence in business. Prerequisite: BSAN 401 with a grade of C or better. Credit Hours: 3

**BSAN405 - Machine Learning in Business** Machine learning and its application to business data and business problems. Where AI and expert systems improve human decision making, machine learning is able to progressively improve its performance in detecting patterns in data and applying solutions with minimal human intervention in a rapidly changing environment. Tools, techniques, and processes for developing machine learning systems. Prerequisite: BSAN 404 with a grade of C or better. Credit Hours: 3

**BSAN406 - Information Visualization** Computer-based information visualization helps people explore data through interactive software in order to gain meaningful and actionable insights This course will help you to programmatically design cognitively useful spatial mapping of data with the purpose of aiding future decision making. This course covers topics including computer graphics and programming, human-computer interaction, semiotics, and cartography. Prerequisite: BSAN 401 with a grade of C or better. Credit Hours: 3

**BSAN407 - Ethics of Analytics** This course explores the thoughtful balance and wide gaps between what is technically possible, what an organization would like to do, and what is legally allowable. Privacy, confidentiality, security, and data ethics policies and processes. Background and development of codes of data and analytics ethics. Credit Hours: 3

**BSAN495 - Internship in Business Analytics** Supervised work experience that relates to the student's academic program and career objectives. Course credit can be used to satisfy the 300-400 level CoBA elective. If the student has already satisfied the 300-400 level CoBA elective, the student can apply credit towards the general elective requirement of the BSAN major. Mandatory Pass/Fail only. Not for graduate

credit. Restrictions: Business Analytics majors, junior standing or higher. Special approval needed from the School. Student can take course for two semesters. Credit Hours: 3

## **Business Analytics Faculty**

**Islam, Md. Shariful**, Assistant Professor, Accountancy, Ph.D., Louisiana Tech University, 2019; 2019. Accounting information systems, auditing, data analytics.

**Kamran-Disfani, Omid**, Assistant Professor, Marketing, Ph.D., University of Missouri-Columbia, 2019; 2019. Data analytics.

**Nelson, H. James**, Associate Professor, Management, Ph.D., The University of Colorado, 1999; 2005. Analytics, artificial intelligence, information systems.

**Perry, Timothy T.**, Clinical Assistant Professor, Finance, Ph.D., Texas Tech University, 2009; 2019. Financial analytics.

**Van Alfen, Tyson**, Assistant Professor, Finance, Ph.D., University of Kentucky, 2019; 2019. Financial analytics.

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### **Southern Illinois University**

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#### **Catalog Year Statement:**

Students starting their collegiate training during the period of time covered by this catalog (see bottom of this page) are subject to the curricular requirements as specified herein. The requirements herein will extend for a seven calendar-year period from the date of entry for baccalaureate programs and three years for associate programs. Should the University change the course requirements contained herein subsequently, students are assured that necessary adjustments will be made so that no additional time is required of them.