BSBA-BUSINESS INTELLIGENCE AND ANALYTICS (BIA)

For the degree of Bachelor of Science in Business Administration (BSBA) with Business Intelligence and Analytics (BIA) as the field of concentration, this program is designed to combine the study of fundamental technical concepts of computer-based business information processing systems with a broad consideration of the organizational and behavioral issues associated with the design and management of such systems. It is designed to prepare students for careers in all areas of information management. Substitution for BIA courses may be made only with the approval from the major advisor and department chair.

Majors in BIA

• BIA: Business Analytics Track (http://catalog.creighton.edu/undergraduate/business/business-intelligence/business-analytics-bs)
• BIA: Information Technology Track (http://catalog.creighton.edu/undergraduate/business/business-intelligence/information-technology-bs)
• BIA: Digital Media and Design Track (http://catalog.creighton.edu/undergraduate/business/business-intelligence/digital-media-design-bs)

Minor in BIA

• Applied Information Technology (http://catalog.creighton.edu/undergraduate/business/business-intelligence/applied-information-technology-minor)

Courses

BIA 253. Management Information Systems. 3 credits. FA, SP
An introduction to the field of management information systems and business intelligence and analytics, and their role in today’s organizations. The course focuses on key concepts including fundamental enabling technologies, database, software development, decision support and knowledge work-support systems as well as MIS systems for operations, control, and strategic planning. The organizational foundations of systems, their strategic role, and the technologies driving change in the business processes will be discussed. P. So. stdg.

BIA 350. Systems Analysis and Design. 3 credits.
This course will provide a study of the information systems development life cycle with emphasis on the planning, analysis, and design phases of systems development. Feasibility analysis, requirements determination, requirements structuring, logical and physical design, and implementation planning will be addressed. The course will explore the various methodologies, techniques, tools, and models used by systems analysts, including process modeling, data modeling, and designing the user interface. P. BIA 253.

BIA 354. Data and Information Management. 3 credits. FA, SP
Course develops both skill and knowledge relative to data base design and management. P. BIA 253.

BIA 366. Business Intelligence and Analytics Internship. 3 credits. FA, SP, SU
This course is designed to award credit to students for major-related significant practical business experience. A qualifying internship should allow students to apply higher-level concepts and technical skills learned in the classroom to real work settings, and must be secured before a student registers for the class. Students must work 150 hours during a semester and complete all online course requirements, including readings, discussions, a performance evaluation from their supervisor and a paper that reflects upon their achievements. The course is graded on a satisfactory/unsatisfactory basis and only 3 hours of internship credit may be used to satisfy graduation requirements. P. Completion of at least 80 credit hours in the Heider College of Business.

BIA 372. Survey of Business Intelligence and Analytics. 3 credits.
Business Intelligence (BI) and Data Analytics are at the forefront of modern business management. This course explores the fundamental sources of BI and surveys the new frontiers of data management and analytics, while introducing techniques and tools used to transform data into actionable information. P. BIA 253 and BUS 229, or Instructor Consent.

BIA 375. Business Application Development. 3 credits. FA
This course provides students with an introduction to business application development using object-oriented programming. The key concepts covered by this course include algorithms and their relationship to basic object-oriented programming concepts, objects and classes, control structure, input and output, exception handling, expressions, and graphic interface design. P. BIA 354 or Instructor Consent.

BIA 459. Information Systems Analysis and Design. 3 credits. FA, SP
An applied study of the process of information systems development. Lectures, discussions, readings and exercises will address the areas of information analysis, requirements determination, detailed logical design, physical design, implementation planning, computer technology and organizational behavior. Through regular deliverables associated with the cumulative project file of a running case, students will follow a widely used structured development methodology (the data flow diagramming approach) in conducting team-oriented systems analysis and design projects. P. BIA 253; Jr. stdg.

BIA 464. Decision Support and Expert Systems. 3 credits.
Concepts needed to develop skills in designing and using decision support systems and expert systems in the context of business decision making. P. BIA 253; Sr. stdg.

BIA 470. Data Communications and Networks. 3 credits.
This course provides an introduction to the concepts and terminology in data communication, networks, network design, and distributed information systems. These topics include equipment, protocols and architectures, transmission alternatives, the communication environment, regulatory issues, and network pricing and management. A combination of lectures, discussions, presentations, and student projects will be used to understand the dynamic field of data communications and issues surrounding it. P. BIA 354 or IC.
BIA 472. Visual Analytics and Visualization. 3 credits.
The general field of visualization focuses on transformations of data to visual representations in order to take advantage of human cognitive capabilities to more efficiently and effectively understand the story being told by the data. Specifically, visual analytics, an advanced form of visualization, is used to understand complex and large-scale data. In this course, students will be introduced to the fundamentals of visualization and the related user experience in producing and interpreting visualizations of business data. Student will also learn to use selected visual analytic tool(s) to conduct various types of analyses. P: BUS 229 and BIA 354, or Instructor Consent.

BIA 476. Cybersecurity. 3 credits.
This course will provide students with a solid technical understanding of cybersecurity or computer security. Students will gain an understanding of security concepts and explore a variety of technical tools that cover a wide range of security topics including governance, network security, database security, application security, cryptography, access controls, and incident and disaster response. P: BIA 354 or Instructor Consent.

BIA 479. Seminar in Decision and Information Technology. 3 credits. FA, SP
The integration and application of current topics in management science, systems analysis and design, or computer and communication technology with a focus on improving decision-making effectiveness in a real-world environment. Past seminar topics include: Web Technologies, Java Programming, E-Business, Business Data Mining, Computer System Architecture and Organization, Neural Networks, Human Factors in IS, and Wireless Technologies. This course is repeatable as long as topic differs (12 credits). P: BIA 253, Sr. stdg.

BIA 480. Business Analytics. 3 credits.
Use of statistical techniques to identify, measure, and quantify uncertainty and risk in modern business data. Topics include a variety of interval estimates, cluster analysis, and alternative regression methods as well as an introduction to the use of simulation and Monte Carlo methods to assess risk and assist decision-making. P: BUS 229.

BIA 481. Web Technologies. 3 credits.
As the interest in websites becomes more widespread, so have peoples’ expectations. It is increasingly obvious that the functionality provided by HTML is insufficient. This is particularly true as more and more websites are used to interact with databases. Many scripting and actual programming languages and environments such as CGI, Javascript, Flash, and XML are being turned to as they can provide the added functionality demanded by today’s commercial websites. This course will explore these and other technologies and use them to create websites. P: Sr. stdg. or IC.

BIA 482. Wireless Technology and Mobile Commerce. 3 credits.
The purpose of this course is to explore the impact of wireless and mobile e-commerce on the ways in which business is conducted in this electronic era, as well as the technologies involved in developing systems that will support this new way of doing business. This exploration is designed to give the student: a) an appreciation for the use of wireless technologies in achieving business objectives and changing the way business strategies are being implemented, b) an understanding of the various technologies used in mobile e-commerce, and c) technical skills for developing and deploying wireless and mobile e-commerce systems. This course aims to provide the student with a balanced coverage on both the managerial and technical issues relevant to wireless and mobile e-commerce. Upon finishing the course, the student is expected to have a good grasp on the strategic, managerial and technical issues in the design and implementation of wireless and mobile e-commerce systems. P: BIA 253, BIA 375.

BIA 483. Managing Information Resources. 3 credits.
This course focuses on the managerial issues faced by business and information systems (IS) managers in today’s technology rich business environment. Special emphasis is placed on information as a critical resource and on its role in policy and strategic planning. The course discusses the issues and techniques relevant to the effective management of information resources. It will take a broad perspective by examining the internal, external, and strategic planning issues involved in IS resource management. The course will also use Harvard Business School cases and other cases to explore the managerial, technical, behavioral issues relevant to IS resource management. P: BIA 253 or equivalent.

BIA 484. Data Mining Techniques. 3 credits.
The purpose of this course is to deal with the issue of extracting information and knowledge from large databases. The extracted knowledge is subsequently used to support human decision-making with respect to summarization, prediction, and the explanation of observed phenomena (e.g., patterns, trends, and customer behavior). Techniques such as visualization, statistical analysis, decision trees, and neural networks can be used to discover relationships and patterns that shed light on business problems. This course will examine methods for transforming massive amounts of data into new and useful information, uncovering factors that affect purchasing patterns, and identifying potential profitable investments and opportunities. P: BUS 229 and BIA 253.

BIA 485. Applications of Artificial Intelligence. 3 credits.
The course will provide a survey of the theory and applications of artificial intelligence in the business decision environment, with an emphasis on artificial neural networks. Students will engage in reviews of current expository and research literature in the area and will attain hands-on experience with computer packages supporting the creation of these types of systems. Neural network design projects will be required of all students. P: MTH 245, BIA 253, BIA 375 and Sr. stdg.

BIA 486. Managerial Decision Modeling. 3 credits.
This course constitutes an introduction to several basic, widely applicable analytical problem-solving methods, including linear programming, network analysis, decision analysis and Monte Carlo simulation. Course coverage places emphasis on developing an ability to represent business problems in a formal framework, allowing for the application of analytical methods in support of decision-making, and on critical interpretation of the results of such decision analysis, in the context of business management. As part of this coverage, students work extensively on solving problems with MS Excel. P: BIA 253 and BUS 229.

BIA 491. The Technology World: A Campus and Travel Course. 3 credits.
This course is designed to provide a capstone travel experience in which students make on-site visits to a variety of organizations known for their business leadership and innovative practice in the field of business intelligence and analytics. The overall aim is to complement a student’s campus-based study of business technology concepts, processes, and activities - as well as exemplar organizations. The course typically includes approximately 15 hours of on-campus study prior to and after the travel portion of the course. The travel portion of the course may involve various destinations. P: Instructor approval.
BIA 493. Directed Independent Readings. 1-3 credits. OD
This is a directed readings course that investigates current developments in management information systems. The course permits individual students to pursue areas of interest within the field of management information systems in greater depth than is covered in the normal curriculum. It also permits a student to do independent research on a specialized topic not ordinarily treated in regular course offerings P: QPA of 3.0 or better; Sr. stdg.; DC and Dean's approval.

BIA 497. Directed Independent Research. 1-3 credits. OD
Supervised independent research on topics beyond the regular course coverage. Course is limited to students who have a QPA or 3.0 or better. P: Sr. stdg; DC and Dean's approval.

BIA 499. Practicum in Business Intelligence & Analytics. 1 credit. FA, SP
This course is designed to provide students with practical understanding and exposure to business applicability of concepts, methods and techniques in BIA. Students attend lectures and seminars, visit businesses, and participate in dialogues with business leaders to further their understanding of BIA. Students keep a journal of their reflective thoughts after attending lectures, discussions, and interactions with industry representatives. This course is graded satisfactory/unsatisfactory. This course can only be taken once for credit and cannot be repeated. P: At least one BIA course at 300 level or above, IC.