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The mission of the Department of Information Systems and Analytics (ISA) is to provide relevant educational opportunities to students wishing to pursue professional careers related to information systems, technology, and data analytics.

The department strives to create an environment for preparing individuals for a lifetime of learning and growth by producing graduates who not only understand the concepts and uses of information systems and analytics but are also capable of applying these concepts to business and government.

ISA graduates pursue careers as IT integrators, global enterprise system architects, database administrators, network administrators, information security analysts, business systems analysts, application developers, digital-business solution developers, data scientists, data analysts, and information systems managers. Graduates work for technology companies, high-tech startup companies, government agencies, accounting firms, oil companies, financial and insurance institutions, retail firms, manufacturing corporation, and consulting companies where they are succeeding at the highest levels.

### Degree Programs Offered

Bachelor of Business Administration (B.B.A.), major in Information Systems

The information systems (IS) curriculum provides a strong foundation in the concepts and applications of information systems and technology in organizations. It gives IS majors the opportunity to study enterprise system design, business intelligence, artificial intelligence in business, data analytics, database development, network and security administration, programming languages, and the integration of hardware and software systems with management practices. The Concentration in Business Analytics prepares students for the emerging world of Big Data and how to effectively analyze business situations for optimal decision making. The concentration consists of 15 hours of undergraduate coursework that may be accommodated within the 120 hours required in the undergraduate business curriculum. More information is available in the McCoy College Academic Advising Center.

Bachelor of Business Administration (B.B.A.), major in Business Analytics

The business analytics curriculum equips students with essential business analytics and data science skills, utilizing statistical and computing methods to transform data into actionable insights for better business decisions. These skills encompass a wide range of areas, including financial portfolio analysis, sales trend analysis, marketing mix model development, cybersecurity management, inventory management, and human capital management. Graduates of the program will be well-prepared for roles such as data analyst, business analyst, business intelligence analyst, and data scientist.

### AACSB Accreditation

The McCoy College of Business is accredited by the Association to Advance Collegiate Schools of Business (AACSB). AACSB Accreditation is known, worldwide, as the longest standing, most recognized form of specialized/professional accreditation an institution can earn.

## Bachelor of Business Administration (B.B.A.)

- Major in Business Analytics (<http://mycatalog.txstate.edu/undergraduate/mccoy-business-administration/computer-information-systems-quantitative-methods/business-analytics-bba/>)
- Major in Information Systems (<http://mycatalog.txstate.edu/undergraduate/mccoy-business-administration/computer-information-systems-quantitative-methods/computer-information-systems-bba/>)
- Major in Information Systems (Business Analytics Concentration) (<http://mycatalog.txstate.edu/undergraduate/mccoy-business-administration/computer-information-systems-quantitative-methods/computer-information-systems-bba/cis-business-analytics/>)
- Major in Information Systems (Information Security Concentration) (<http://mycatalog.txstate.edu/undergraduate/mccoy-business-administration/computer-information-systems-quantitative-methods/cis-info-security-bba/>)
- Major in Information Systems (AI Development Concentration) (<http://mycatalog.txstate.edu/undergraduate/mccoy-business-administration/computer-information-systems-quantitative-methods/cis-software-dev-bba/>)

## Minor

- Data Analytics

**Subjects in this department include: ANLY (p. 1), ISAN (p. 3)**

## Courses in Analytics (ANLY)

### ANLY 2300. Introduction to Data Analytics.

This course introduces data science and analytics fundamental concepts and applications. It covers the use of visualization software, and describes the use of data wrangling, descriptive, predictive and prescriptive analytical models. Topics include the ethical and societal implications of analytics and development of data storytelling.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

### ANLY 2333. Business Statistics.

This course covers descriptive and inferential statistical techniques for business and economic decision-making. Topics include measures of central tendency and dispersion, probability distributions, sampling distributions, confidence intervals, hypothesis testing, simple linear regression, and correlation analysis. Prerequisite: [ISAN 1325 or ISAN 1323] and [MATH 1329 or MATH 2331 or MATH 2471] both with grades of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**TCCN:** BUSI 2305

**ANLY 3314. Decision Analytics.**

This course introduces the theory, algorithms and applications of decision making methods that are used in analyzing and solving business problems. The methods to be discussed include linear programming, integer programming, network optimization, simulation, and decision models with uncertainty. Prerequisite: ANLY 2333 or MATH 2328 or [ANLY 2300 and [GEO 3301 or PSY 2301 or IE 3320 or SOCI 3307 or PH 3315]] with a grade of "D" or better and a minimum 2.0 Overall GPA. .

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ANLY 3330. Introduction to Business Analytics.**

This course introduces business analytics fundamental concepts and applications. It covers the use of visualization software, and describes the use of data wrangling, analytical models and data storytelling; with an emphasis on business applications. It also discusses ethical and societal implications, and data storytelling.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ANLY 3334. Statistical Modeling.**

This course allows students to apply a broad range of statistical analysis techniques using statistical software in business decision-making. Topics include applied modeling techniques, such as regression modeling, time-series modeling and analysis of variance; non-parametric methods; quality control; and simulation. Prerequisite: ANLY 2333 or MATH 2328 with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ANLY 3339. Data Mining and Visualization.**

This course introduces data mining concepts and practical skills for applying data mining techniques to solve business problems. It emphasizes data visualization and data analysis algorithms (e.g., prediction, classification, clustering), systematic evaluation, and model assessment for big data sets. Prerequisite: ANLY 2333 or MATH 2328 or [ANLY 2300 and [GEO 3301 or PSY 2301 or IE 3320 or SOCI 3307 or PH 3315]] with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ANLY 3341. Computational Methods for Analytics.**

This course is an introduction to statistical programming. The objective of this course is to use programming tools and statistical methods to analyze large data sets. Topics covered are graphs used for statistical analysis, statistical modeling, visualization techniques, simulation, and optimization. Prerequisite: ANLY 2333 or QMST 2333 or MATH 2328 or [ANLY 2300 or QMST 2300 and [GEO 3301 or PSY 2301 or IE 3320 or SOCI 3307 or PH 3315]] with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ANLY 4320. Analytics in Practice.**

This course covers the use of analytical methods in business practice. Students are expected to do an applied project that includes steps of problem understanding, data preparation, model building, validation, and communication. Prerequisite: [ANLY 3334 OR ANLY 3339] AND [ANLY 3341 OR ANLY 3305] with grades of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ANLY 4321. Predictive Analytics.**

This course covers the use of predictive analytics methods such as advanced regression and classification to solve business problems. Particular topics include feature selection and shrinkage methods such as ridge and lasso regression; deep neural network learning; ensemble methods based on bagging (e.g., random forests) and boosting. Bias-variance trade-off and model complexity will be emphasized. Prerequisite: ANLY 3339 with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ANLY 4373A. Operations Analytics.**

This course introduces the analytics concepts and tools used in planning and managing business operations. The course emphasizes forecasting, service systems, queueing analysis, optimization, decision analysis, simulation, and quantitative supply chain analysis. Topics include but are not limited to inventory control, logistics and distribution planning, process analysis, and quality management. Prerequisite: A minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing|Dif Tui- Business Admin|Topics

**Grade Mode:** Standard Letter

**ANLY 4373F. Big Data Analysis and Artificial Intelligence.**

This course demonstrates utilization of analytical and artificial intelligence methods along with big data to solve business problems. It introduces high performance computing, big data storage and analysis, distributed and parallel programming to increase throughput and/or reduce latency of selected applications. Prerequisite: [ISAN 3305 OR ANLY 3341] AND ISAN 3382 AND ANLY 4321 with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ANLY 4395. Independent Study in Analytics.**

This course provides an in-depth study of a single topic or related problem solved through analytics research. May be repeated once for credit with a different emphasis. Prerequisite: Instructor Approval.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing|Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ANLY 4399. Analytics Internship.**

This course provides an integration of professional and academic experience through internship with an external employer. Credit awarded as pass/fail. Prerequisite: Instructor Approval.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing|Dif Tui- Business Admin

**Grade Mode:** Credit/No Credit

## Courses in Information Systems (ISAN)

**ISAN 1323. Introduction to Microcomputer Applications.**

This course develops advanced information technology skills, focusing on office productivity software. Primary emphasis is placed on spreadsheet, database, and presentation software. Advanced techniques are presented for use in data analysis and decision-making. Students will be expected to demonstrate mastery of these techniques in a hands-on environment.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**TCCN:** BCIS 1305

**ISAN 3305. Business Programming I.**

This course provides an introduction to application program development including requirement analysis, design, implementation, and testing.

A blend of structured and object-oriented concepts is used to form solutions to business problems using a visual programming language. Prerequisite: ISAN 1325 or ISAN 1323 with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3317. E-Business.**

The course explores the constantly changing world of e-Business from an international perspective. This course will emphasize e-Business challenges and opportunities in the worldwide marketplace, while focusing on global issues of management, implementation, and integration of IT resources. (MULT) Prerequisite: A minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3325. Business Programming II.**

This course is an advanced visual programming course covering topics related to the design and implementation of user interface, business logic and data access in a tiered architecture. The emphasis is on techniques that take advantage of a development framework through the use of forms, classes, and objects. Prerequisite: ISAN 3305 with a grade of "D" or better and a minimum 2.0 Overall GPA. Corequisite: ISAN 3374 and ISAN 3382 both with grades of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3348. Data Communications and Network Architecture.**

This course is oriented to the technical concepts of data communications and network designs and how they relate to contemporary computer end-user environments. It incorporates the systems approach for understanding, designing, managing, securing, and implementing data communication networks. Students will analyze and design data communication networks for various business situations. Prerequisite: A minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3350. Information Systems Security.**

This course examines the concepts of information systems and network availability, integrity, and confidentiality in order to develop effective security controls, processes, practices, and procedures. Topics include methodologies, models, architectures, access control systems, ethics, and legal implications of IT security. Prerequisite: A minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3360. Web Design and Development.**

This course focuses on design, creation, and maintenance of websites. It covers fundamental technologies for structuring and presenting content on the web and development framework for creating mobile-first web pages. Prerequisite: A minimum 2.0 Overall GPA. Corequisite: ISAN 3374 with a grade of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3374. System Analysis and Design.**

This course enables students to understand the analysis and general design phases of the system development life cycle are reviewed. Emphasis is on techniques and tools for determining systems requirements that lead to the development of logical design models using structured and object-oriented methodologies. (WI) Prerequisite: A minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin|Writing Intensive

**Grade Mode:** Standard Letter

**ISAN 3380. Enterprise Information Technology and Business Intelligence.**

This course will extend students' ability to effectively use integrated software applications to identify and provide access to various information sources. The course will focus on applying information and Internet Technologies that span normal business functions to develop and implement solutions to managerial problems. Prerequisite: [ISAN 1325 or ISAN 1323] and [ANLY 2333 or MATH 2328] and [MATH 1329 or MATH 2471] all with grades of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3382. Computer Data Base Systems.**

This course covers concepts and methodology of planning, design, development, and management of the computerized database. The emphasis is on logical database design and a study of relational implementation. A relational database management system with a relational query language is used for the development of a business application system. Corequisite: ISAN 3305 or ANLY 3341 with a grade of a "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3389. Programming for Data Processing.**

This course emphasizes the development of data processing software. Topics include designing applications for analyzing and manipulating numerical and textual data from external data sources. Sequence and collections structures, object serializations, design techniques, and reporting will be examined. Prerequisite: ISAN 3305 and [ANLY 2333 or MATH 2328] both with grades of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3390. Agile Project Management.**

This course introduces project management body of knowledge as applied to Information Technology projects with emphasis on Agile Methodologies. The management of scope, costs, schedules, quality, risks, program management, system methodologies, material procurement, human, and international issues will be examined. Prerequisite: ISAN 3374 and ISAN 3305 with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 3392. Introduction to Machine Learning.**

This course provides a comprehensive overview of foundational concepts, algorithms, and applications of machine learning. Students gain hands-on experience through programming assignments and case studies, exploring real-world applications like natural language processing, computer vision, and reasoning. The course emphasizes both theoretical understanding and practical implementation of machine learning techniques, preparing students to apply these skills across various domains. Prerequisite: [ISAN 3305 or CIS 3305 or CIS 2324] and [ANLY 2333 or QMST 2333 or MATH 2328] with grades of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**ISAN 4318. Object Oriented Development.**

This course delves into the sophisticated application of object-oriented programming (OOP) principles within the realm of business application development. Topics include an in-depth exploration of concepts, methodologies, and toolsets essential for designing, implementing, and rigorously testing software applications grounded in the object-oriented paradigm. Participants will gain hands-on experience in applying OOP techniques to tackle real-world business challenges, ensuring a practical understanding of how these principles can be effectively utilized to build robust, scalable, and maintainable software solutions. Prerequisite: ISAN 3374 with a grade of "D" or better and a minimum 2.0 Overall GPA. Corequisite: ISAN 3382 with a grade of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 4321. Mobile Application Development for Android.**

This course introduces the concepts, methodology, and toolset for designing business applications for mobile devices. Students will learn the MVC development framework and Java programming environment for Android to create interactive business applications. Prerequisite: ISAN 3374 with a grade of "D" or better and a minimum 2.0 Overall GPA. Corequisite: ISAN 3382 with a grade of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 4322. Computer System Development and Design.**

This course integrates systems development with analysis, design, project management, and the systems development life cycle. Object-oriented methods and UML models will be used to develop a project for a client. Students will select methodology, platform, and development technology based on client requirements. Prerequisite: ISAN 3325 with a grade of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 4325. Legacy Systems: Applications, Development, and Support.**

This course focuses on the role of developers in developing, maintaining, supporting, and migrating mission-critical legacy applications within modern, high-volume transactional organizations. It covers key language proficiency and development processes, offering students the chance to gain proficiency in essential legacy application languages and processes. This enables effective development, modification, testing, and troubleshooting of legacy mission-critical applications. Practical assignments provide hands-on experience. Featured guest speakers from IT Legacy organizations will share insights. Prerequisite: ISAN 3305 with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**ISAN 4328. Artificial Intelligence: Development and Application.**

This course immerses students in Large Language Models and Generative Pre-trained Transformers (GPT). The students will master both the theoretical foundations and practical aspects of development. Activities include building custom models, fine-tuning existing ones, and delving into advanced transformer architectures. The course covers real-world applications such as text generation, translation, and chatbots. Additionally, it addresses ethical considerations, bias detection, and model interpretability. Through applied projects, students acquire expertise relevant to AI-driven industries and research, positioning them to meet the demands of the rapidly changing business landscape. Prerequisite: ISAN 3305 with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**ISAN 4332. Enterprise Resource Planning Systems.**

This course uses advanced information technology for integrating business functions in an enterprise through distributed databases. Methodology and tools for the selection and implementation of Enterprise Resource Planning (ERP) systems are discussed. Students will use available ERP software to create, track and communicate enterprise information. Prerequisite: ISAN 3380 with a grade of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 4349. Advanced Database Management Systems.**

This course introduces advanced concepts and database processes to support applications for Business Intelligence. Multi-dimensional modeling along with database, reporting, and analysis capabilities of a modern database environment will be used to design and develop stored information cubes. Prerequisite: ISAN 3382 with a grade of "D" or better. Corequisite: ANLY 3339 with a grade of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 4350. Ethical Hacking.**

This course focuses on the technology and managerial issues related to information systems security. Topics include: Attack methods, access control, authentication, firewalls, incident and disaster response, disaster recovery, security function management, and cryptography. Prerequisite: Minimum 2.0 overall GPA. Corequisite: ISAN 3348 with a grade of a "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 4358. Network and Cloud Administration.**

This course provides students with an understanding of the responsibilities assigned to network and cloud administrators. Students will acquire a working knowledge of these responsibilities and skills using tools and technologies for administering enterprise networks via network operating systems and cloud computing commonly used in modern business enterprises. Prerequisite: ISAN 3348 with a grade of "C" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 4360. Developing AI Solutions for the Enterprise.**

This course covers the applications of artificial intelligence (AI) concepts, development methodologies, and toolsets for the design, implementation, and deployment of innovative business solutions within an enterprise setting. It emphasizes the integration of AI services, models, and framework in a tiered computing environment to improve business processes. Students will gain hands-on experience by developing a real-world project using a leading AI platform in the industry. Prerequisite: ISAN 3374 and ISAN 3382 and [ISAN 3325 or ISAN 3392 or ISAN 4328] with a grade of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 4373A. Cyber-Warfare: Actors, Techniques, and Impact.**

This course is designed to cover all aspects of historical cyberwarfare incidents (those including nation-state actors). Topics covered include the political and/or social actors for each occurrence covered, the timeline of events leading up to, and including the actual incursion or event, the technical explanation for what occurred, and the fallout and impact of the event. Prerequisite: A minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing|Dif Tui- Business Admin|Topics

**Grade Mode:** Standard Letter

**ISAN 4373D. Artificial Intelligence in Business Operations.**

This course delves into the impact of artificial intelligence (AI) on modern businesses, providing a comprehensive introduction to key AI concepts, including machine learning, natural language processing, and computer vision. Participants will explore practical AI applications in fields such as marketing and finance through hands-on exercises and real-world examples. The course aims to equip learners with the skills and knowledge necessary to navigate the AI-driven business landscape, preparing them for future challenges by understanding AI's transformative potential across various organizational aspects.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing|Dif Tui- Business Admin|Topics

**Grade Mode:** Standard Letter

**ISAN 4373E. Programming for Information Security.**

This course covers advanced programming topics with a focus on information security. Students will learn to develop secure software, identify and mitigate vulnerabilities, and apply coding for cybersecurity tasks. Utilizing practical examples and real-world scenarios learners will gain hands-on experience in crafting solutions to protect against cyber threats. Designed for those seeking to blend programming expertise with security best practices, this course equips participants with the skills to address contemporary digital security challenges. Prerequisite: CIS 2324 or CIS 3305 with a grade of "D" or better and a minimum 2.0 Overall GPA.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing|Topics

**Grade Mode:** Standard Letter

**ISAN 4373F. Agentic Artificial Intelligence Development for Business Applications.**

This course introduces the emerging field of agentic artificial intelligence and its applications in business. Students will learn how intelligent agents can plan, act, and adapt to achieve organizational goals across areas such as decision support, operations, and customer engagement. The course emphasizes both the opportunities and challenges of building systems that act with a degree of autonomy. Through case studies and applied projects, students will explore how agentic approaches can transform business practices. This course does not earn graduate degree credit. Prerequisite: ISAN 3374 and ISAN 3382 and [ISAN 3325 or ISAN 3392 or ISAN 4328] all with a grade of "D" or better.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing|Topics

**Grade Mode:** Standard Letter

**ISAN 4395. Independent Study in Information Systems.**

This course provides an in-depth study of a single topic or related problem solved through information systems research. May be repeated once for credit with a different emphasis. Prerequisite: Instructor approval.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing|Dif Tui- Business Admin

**Grade Mode:** Standard Letter

**ISAN 4399. Information Systems Internship.**

This course provides an integration of professional and academic experience through internship with an external employer. Credit awarded as pass/fail. Prerequisite: Instructor approval.

**3 Credit Hours. 0 Lecture Contact Hours. 15 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing|Dif Tui- Business Admin

**Grade Mode:** Credit/No Credit