Information Systems & Analytics (ISA)

ISA 2010. Proficiency in Excel & SQL. 3 Hours.
Required of all students in the College of Business and open to other interested students. This hands-on course covers fundamentals and advanced concepts necessary to prepare students to pass the Microsoft Office Specialist (MOS) Excel Expert Certification. Students will take the MOS Excel Expert Certification as part of the course. Covers beginning Structured Query Language (SQL) commands used in most relational database management systems for joining and extracting data to solve business problems. Skills in this course will be critical for several upper division courses in the College of Business. Inclusive Access Course Material (electronic book) fees may apply, see Fees tab under each course section for details. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Create spreadsheet models that include advanced formulas, functions, charts, pivot tables, and macros. 2. Prepare valid data analysis spreadsheet models to aid in decision making. 3. Use basic SQL syntax in typical business applications. 4. Develop SQL queries that extract and join data from multiple tables to solve a business problem. 5. Identify and defend personal, ethical, and organizational issues related to the use and misuse of spreadsheet models and SQL commands. FA, SP, SU.

ISA 2011. Microsoft Office Specialist (MOS) Excel Expert Certification. 0 Hours.
Will post a Pass on student transcript if student can show they have met Microsoft Office Specialist (MOS) Excel Expert Certification. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Demonstrate certification in Microsoft Office Specialist (MOS) Excel Expert.

ISA 2050. Management Information Systems. 3 Hours.
Designed for students to gain an understanding of the application of technology in business. Covers information systems solutions to business problems and accounting systems concepts fundamental to the support of business processes in the operational, strategic, and decision making roles of management. Includes systems design and development, enterprise resource planning, control issues, system security, and maintenance. Emphasizes end-user applications of management information systems (MIS), challenges of managing information technology, and using MIS as a strategic management tool. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Demonstrate proficiency in the fundamentals of Information Systems. 2. Describe and identify the key elements of Global Information Systems. 3. Analyze a complex business situation, identify relevant functional business and technological issues and defend viable courses of action. 4. Articulate strategies for implementing and/or improving information systems to create value for an organization. 5. Demonstrate the skills needed for working effectively in teams. 6. Identify and defend personal, ethical, and organizational issues in Information Systems. Prerequisites: ISA 2010. FA, SP.

ISA 3001. Info Sys and Analytics Intermediate Career Strategies. 1 Hour.
Required of students pursuing a major in information systems & analytics. Intermediate career strategy course with the emphasis on successfully completing a focused career search in information systems & analytics. Target career industry sector(s) and specific opportunities and/or career tracks within preferred sector(s) will be identified. Emphasis is placed on creating a professional career strategy and career portfolio. It is recommended that students take this course by their junior year. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Identify current career related skills, interests, and values. 2. Identify potential career tracks and opportunities in information systems & analytics. 3. Identify key skills, knowledge and competencies necessary for successful career in information systems & analytics. 4. Conduct personal career SWOT analysis in the context of desired career tracks. 5. Create a career strategy for successfully entering the job market after graduation, including developing a professional portfolio, updating resume, improving interviewing skills, and building a professional network. Prerequisites: Recommended SSC 1010, or BUS 1050, or BUS 2000. FA, SP.

ISA 3020. SQL & Python for Analytics. 3 Hours.
This course will introduce essential concepts in SQL and Python as it relates to data analytics. Students will be required to gain competency in cleaning , organizing, and analyzing data in ways that are common to business. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Demonstrate proficiency in building tables, inserting and deleting data, and updating existing data. 2. Demonstrate proficiency in querying the database including joining tables, including specific rows, and including specific columns. 3. Demonstrate proficiency utilizing subqueries, aggregates , group by , and having statements. 4. Demonstrate proficiency building stored procedures to extract understanding from the data. 5. Apply Python to read in data sets and include data oriented libraries. 6. Utilize Python to perform basic data analysis including descriptive statistics as well as aggregate statistics. 7. Utilize Python to Identify independent and dependent variables to perform extensive regression analysis. 8. Demonstrate a working proficiency in using regression analysis to gain insight into business problems. Prerequisites: ISA 2050 (Grade C- or higher). FA, SP.

ISA 4060. Big Data Analytics. 3 Hours.
Course focuses on a theoretical and hands-on exploration of business intelligence and analytics. It covers current best practices in statistical and quantitative analysis using large-scale data sets, exploratory and predictive models, and evidence-based methods to improve business decisions and actions. Dual listed with IT 4060 (students may only take one course for credit). **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Identify the key components and concepts associated with big data analytics. 2. Apply big data and statistical best practices to collect, cleanse, transform, and store large-scale data for subsequent analysis. 3. Analyze large-scale data sets to identify hidden patterns. 4. Evaluate data models using best practices. 5. Create recommendations for improving business decisions based on the data analysis. Prerequisites: ISA 3020 (Grade C- or higher). FA.

ISA 4070. Data Visualization and Storytelling. 3 Hours.
A focus on the methods, tools and processes to effectively visually encode and present insights discovered from previously analyzed data. It includes practice transforming simple and complex data analysis outputs into relevant, accurate, and effective visual displays to improve communication and decision making. Dual listed with IT 4070 (students may only take one course for credit). **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Identify the key components and concepts associated with data visualization. 2. Recognize the ethical and financial consequences of poor data visualization techniques. 3. Differentiate between effective and ineffective methods in data analysis reporting. 4. Create graphically encoded data into useful formats from previously analyzed data. 5. Demonstrate the accurate communication of statistical findings for real world big data problems to decision makers with diverse skill levels. Prerequisites: ISA 2010 or ISA 2011 (Recommended) Grade C- or higher. SP.

ISA 4250R. Analytics & Modeling Practicum. 1-3 Hours.
Elective analytics course for information systems and analytics students and open to other majors. Students get hands on experience working with analytics projects for the community. Course may be repeated for up to 6 credits. **COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course students will: 1. Define and scope an advanced analytics or data science project to fit the needs of a community partner. 2. Apply appropriate industry standard analytics ideas, methodologies, and tools. 3. Create value, insight, and knowledge using data science skills and principles. Prerequisites: Instructor Permission required.

ISA 4450. Project Management. 3 Hours.
The project management course introduces students to the main stages of effectively managing the work of a team to achieve desired objectives. These stages include: initiating, planning, executing, controlling, and closing. It covers common pitfalls and best practices for successful management of a project. Software tools to facilitate the process will also be introduced. Finally, students will practice relating with stakeholders and team members in a professional manner. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Describe best practices for managing projects of various sizes including quality, time, cost, scope, risk, and success factors. 2. Identify common project pitfalls and strategies for avoiding them. 3. Identify resources needs, constraints, and estimate costs for each stage of the project life cycle. 4. Articulate roles to team members and clearly identify responsibilities and accountability. 5. Use good project management skills in a real world scenario including alignment with the organization's strategic plan, resolving differences, tracking progress, and making adjustments as necessary. 6. Analyze software tools to enhance the project management process. 7. Collaborate with stakeholders and project members in a professional manner. SP.

ISA 4600. Senior Project. 3 Hours.
Capstone course requiring the completion of an aggressive information systems and analytics project. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Plan, identify, and design an ISA related project using industry standard techniques. 2. Communicate effectively with stakeholders on project progress and produce professional quality written and oral ISA reports that meet their needs. Prerequisite: Senior Standing, OR Instructor Permission. SP.