Information Systems & Analytics (ISA)

Courses

ISA 3020. Structured Query Language for Business Users. 1 Hour.
This course seeks to introduce students to the basic Stuctured Query Language (SQL) commands that can be used in most relational Database Management Systems (DBMS) such as Oracle, SQL Server, mySQL, Microsoft Access, SAP, DB2, and PostgreSQL. This course will not only provide a theoretical foundation, but also hands-on practice executing and experimenting with those commands in multiple DBMS with a focus on business user's needs to solve business problems or aid decision making. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Demonstrate proficiency in the fundamentals of the basic structure of relational databases and the relevance of SQL in any relational DBMS. 2. Show an understanding of the basic SQL syntax useful to typical business users. 3. Create SQL code in at least two different DBMS and illustrate similarities and differences in the code between these DBMS. 4. Use SQL to analyze a complex business situation, identify how the SQL results can lead to better decision making, and suggest viable courses of action. 5. Identify and defend personal, ethical, and organizational issues related to the use and misuse of SQL. Prerequisite: CIS 2010 (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. **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. Prerequisite: ISA 3020 or IT 4300 (both Grade C- or higher), and STAT 2040 (Grade C- or higher). FA.

ISA 4070. Big Data Visualization. 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. **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. 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.