



## DEPARTMENT OF BUSINESS INFORMATION & ANALYTICS

Analytics is a valuable partner to almost any field of study, including engineering, agriculture, social science, medical science, environmental science, forestry, marketing, accounting and finance.

### Course Descriptions

#### **INFO 3100 AUTOMATING BUSINESS PROCESSES**

Basic programming style, logic, and structures (variables, control statements, loops, arrays, operators, etc.)  
Software: Excel VBA and Python [Prereq: INFO 2020]

#### **INFO 3140 FOUNDATIONS OF INFORMATION MANAGEMENT**

Database fundamentals, data modeling and normalization, and database creation and queries (SQL)  
Software: MS Access and Visio [Prereq: INFO 2020]

#### **INFO 3200 DATA MINING AND VISUALIZATION**

Descriptive analytics (data visualization and dashboards/scorecards) and predictive analytics (time series analysis, cluster analysis, regression and decision trees)  
Software: JMP and R [Prereq: INFO 2020]

#### **INFO 3240 ENTERPRISE INFORMATION MANAGEMENT**

Enterprise database design and modeling, advanced database queries, functions, procedures, and application development  
Software: SQL Server, SSMS, and Visual Studio [Prereq: INFO 3100/3140]

#### **INFO 3300 DATA WAREHOUSING AND BUSINESS INTELLIGENCE**

Data warehouse components and construction, extraction, transforming and loading (ETL), and data cleansing, predictive analytics, descriptive analytics, and cluster and association modeling  
Software: SQL Server, SSMS, SSAS, PowerBI, and Visual Studio [Prereq: INFO 3240]

#### **INFO 3340 PROJECT MANAGEMENT AND SIMULATION**

Plan projects with flexibility in scope, timeframe and resources. Critical chain approach, probability distributions versus point estimates and Monte Carlo simulation modeling  
[Prereq: INFO 2020]

#### **INFO 3400 COMPLEX DATA ANALYTICS**

Techniques and tools for analyzing text data and drawing conclusions from data  
Software: Alteryx and NodeXL [Prereq: INFO 3200]

#### **INFO 3440 OPTIMIZATION MODELING**

Spreadsheet model design, optimization and linear programming, cloud computing/codesharing, technical writing and project documentation  
Software: Excel and Python [Prereq: INFO 2020, Coreq: INFO 3100]

#### **INFO 3500 CAPSTONE/SENIOR PROJECT**

Partner company/organization project with written and oral presentation  
Software: based on problem and partner [Prereq: INFO 3340]

## DEPARTMENT OF BUSINESS INFORMATION & ANALYTICS

**Analytics is a challenging and exciting field that helps people make important, informed decisions based on quantitative information.**

Business analysts make extensive use of data modeling, statistical techniques and scenarios to manipulate data to find meaning, explain causation, and make predictions. Currently, massive amounts of structured and unstructured data are collected and stored by computers as a result of business and society's greater dependence on information technologies and software applications to transact business and everyday life. As such, data analytics skills are highly portable and becoming a frequently sought competency in workers.

### **35 Best Jobs in America: Data Scientist, Data Engineer, Data Analyst, Business Analyst**

*This is based on number of job openings, salary and career opportunities rating. According to IBM, a data scientist is the natural evolution of the business or data analyst role, but "what sets the data scientist apart is strong business acumen, coupled with the ability to communicate findings to both business and IT leaders in a way that can influence how an organization approaches a business challenge." - Glassdoor 2022*

### Major

**(44 credit hours + BSBA core)**

#### **9 REQUIRED COURSES**

INFO 3100 Automating Business Processes  
 INFO 3140 Foundations of Information Management  
 INFO 3200 Data Mining and Visualization  
 INFO 3240 Enterprise Information Management  
 INFO 3300 Data Warehousing and Bus. Intelligence  
 INFO 3340 Project Management and Simulation  
 INFO 3400 Complex Data Analytics  
 INFO 3440 Optimization Modeling  
 INFO 3500 Capstone/Senior Project

#### **2 INFO ELECTIVES 3000s**

### Minor

**(24 credit hours)**

#### **4 REQUIRED COURSES**

INFO 1010 Data Management and Analysis  
 INFO 1020 Business Statistics and Analytics  
 INFO 3100 Automating Business Processes  
 INFO 3140 Foundations of Information Management

#### **2 INFO ELECTIVES 3000s**

*NOTE: Nonbusiness majors must take INFO 2020 as one of their electives or already have an equivalent regression course.*

### Typical Major Course Sequencing

Year	Fall	Winter	Spring
<b>JR</b>	(Last chance for INFO 2020)	INFO 3100 INFO 3140	INFO 3200 INFO 3240
<b>SR</b>	INFO 3300 INFO 3340 Elective	INFO 3400 INFO 3440	INFO 3500 Elective

For minors and those off sequence, we may offer some courses off cycle:

Fall	Winter	Spring
INFO 3100 INFO 3140 INFO 3200	Elective	INFO 3100 INFO 3140