CIS C275: DATA MINING AND ANALYTICS (DATA+)

Item	Value
Curriculum Committee Approval Date	11/12/2021
Top Code	070200 - Computer Information Systems
Units	3 Total Units
Hours	68 Total Hours (Lecture Hours 54; Lab Hours 14)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

This course covers intermediate topics of data analytics and its applicability to the business world. The practical application of business intelligence and data analysis will be experienced through the manipulation of complex datasets, application of visualizing and reporting data, and the analysis of complex datasets while adhering to quality standards. The business decision-making process will be applied with an emphasis on data mining and manipulation. Critical thinking and performance-based exercises aligned with CompTIA Data+ exam help students develop skills to prepare for careers such as Data Analyst, Reporting Analyst, and Operations Analyst. ADVISORY: CIS 250 and C280. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Demonstrate communication skills that facilitate the effective presentation of data analysis results.
2. Apply technical skills in predictive and prescriptive modeling to support business decision-making.
3. Translate data into clear, actionable insights for business stakeholders.

Course Objectives

- 1. Describe the process of data mining for business intelligence.
- 2. Explain how to manipulate data from multiple datasets to produce valuable business data or information.
- 3. Explain how to apply basic statistical methods to analyze data.
- 4. Demonstrate how to provide a visual representation of data that is appropriate for business-decision makers.
- 5. Describe how to develop narrative reports for business stakeholders based on datasets.
- 6. Provide examples of data governance and quality standards that apply throughout the entire data lifecycle.

Lecture Content

Data Mining and Analytics Machine Learning Databases and Data Warehouses Data Visualization and Reporting Techniques Toolset: Excel Toolset: SQL Programming, Data Mining, and Analytics Solutions Data Preprocessing and Cleansing Data Clustering Classification Predictive Analytics Association Mining Text and Images Big Data Mining and Complex Datasets Data Governance and Quality Standards Planning and Launching Data Projects for Business-Decision Making Careers and Job Roles in Data Analytics

Lab Content

Mine and manipulate data from complex datasets Report on data retrieved through dashboards and other visualization techniques Evaluate and analyze multiple datasets to provide information for business-decision making scenarios Analyze complex datasets while adhering to governance and quality standards throughout the entire data life cycle

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)
- Lab (04)
- DE Live Online Lab (04S)
- DE Online Lab (04X)

Instructional Techniques

This course will utilize a combination of lecture, remote virtual machine lab assignments, classroom discussion with student interactions, problem-solving techniques, quizzes, exams, and troubleshooting assignments to achieve the goals and objectives of this course. All instructional methods are consistent across all modalities.

Reading Assignments

Read open educational resource materials Read journal articles and corporate reports Read news articles Read interactive career websites

Writing Assignments

Develop a procedure for data mining on a complex dataset Create a list of data quality standards for a given business or industry Write short essays about strategies for data manipulation

Out-of-class Assignments

Manipulate complex datasets to provide insight for business-decision making Conduct online research to locate recommendations and suggestions for data quality standards and governance policies Lab assignments

Demonstration of Critical Thinking

Students will write technical reports based on the instructions provided in the case scenarios to demonstrate the application of critical thinking.

Required Writing, Problem Solving, Skills Demonstration

Manipulate a complex dataset to provide visualizations and narrative reports for different target audiences or specific management scenarios.

Eligible Disciplines

Computer information systems (computer network installation, microcomputer ...: Any bachelors degree and two years of professional

experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Jamsa, K. Introduction to Data Mining and Analytics, ed. Jones Bartlett Learning, 2020

Other Resources

1. The Coastline Library provides access to a wide range of resources, including subscription databases and eBook collections. Instructors are encouraged to contact the library for specific resources based on course assignments. library@coastline.edu 2. White papers, reports, and articles are available at no charge to all students at multiple sites as recommended by the instructor.