

# Advanced Data Analytics

# 2023-2024 Catalog

[ARCHIVED CATALOG]

## DBMS 260 - Advanced Data Analytics

**PREREQUISITES:** [DBMS 160 - Data Visualization and Analysis](#) or [INFM 219 - Business Intelligence and Reporting](#) and [MATH 200 - Statistics](#) (or Higher).

PROGRAM: Data Analytics

**CREDIT HOURS MIN:** 3

LECTURE HOURS MIN: 2

LAB HOURS MIN: 2

DATE OF LAST REVISION: Fall, 2020

Advanced Data Analysis will teach students the concepts and tools to analyze datasets. Students will use database software, scripting languages, and visualization programs to gather, organize, predict outcomes, and categorize data. Students will learn advanced analytics tools such as creating pivot tables, pivot charts, advanced functions, statistical formulas, advanced filtering techniques, decision making tools, and connecting to external databases.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:



1. Analyze data by creating subtotals, pivot tables, and pivot charts.
2. Demonstrate how to use decision making tools for data analysis.
3. Manipulate data using date, logical, lookup, database, and financial functions.
4. Apply statistical functions to analyze data for decision making including K-Means vs. K nearest neighbor, and Linear vs. Logistic Regression.
5. Demonstrate how to validate and manage data within workbooks and dashboards.
6. Demonstrate how to manage data from external data sources.
7. Employ visual representation techniques to increase understanding of complex data.
8. Establish data validation processes such as lookup fields and input masks to improve data entry in databases.
9. Perform data analysis using advanced Data Manipulation Language (DML) queries.
10. Create advanced queries for specialized purposes.
11. Produce dynamic and interactive charts and graphs to determine feature extraction.
12. Design and implement basic and advanced transformations to filter and format data.
13. Construct advanced formulas using data analytics programming languages to solve business problems.
14. Compare models of supervised vs unsupervised learning, classification, regression, and clustering.

COURSE CONTENT: Topical areas of study include -

- Structured Query Language (SQL)
- Spreadsheets
- Data Validation
- Conditional Formatting
- Data Analysis
- Pivot Tables
- Pivot Charts

- Data Analytics Programming Languages
- Summarizing and Analyzing Data
- Decision Making Tools
- Specialized Functions
- Managing Data
- Data Visualization
- Data Manipulation Language
- Machine Learning
- Artificial Intelligence (AI)
- Neural and Deep Neural Nets

[Course Addendum - Syllabus \(Click to expand\)](#)

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