Syllabus for HIMT425
Data Warehousing & Mining

NOTE: This syllabus document contains the basic information of this course. The most current syllabus is available in the full course.

Course Description

The course introduces the elements of the data warehouse development methodology (design, data acquisition, data management, data analysis-query-mining, data visualization), focusing on serving the informational and analytical needs of an enterprise. It examines the concepts of the data warehouse and the data-mart from various points of view (purpose, architecture, utilization, and security) and addresses the process of creating a data warehouse/data-mart solution from identifying an enterprise's informational and analytical needs to producing business intelligence (BI) by extracting useful information from the data warehouse using data mining methods and models. The course also examines the issues of data warehousing effectiveness in supporting strategic decision making.

Topics include:

- Decision support systems
- Data warehouse architecture and design
- Data acquisition
- Data-marting
- Software and hardware requirements
- Security and performance
- Data analysis
- Data mining

Prerequisite

- HIMT 375: Database Structures and Management Systems

Course Outcomes

At the conclusion of this course, you will be able to:

- Identify the most important informational and analytical needs of an enterprise and develop a data warehouse solution that serves these needs.
- Use the data warehouse solution to perform simple data mining tasks.

- Recognize the essential properties of data and the role these properties play in the analysis process.
- Re-engineer the operational database(s) of a given enterprise and provide a data warehouse design focused on addressing the most important informational and analytical needs of the enterprise.
- Apply specific design techniques (data partitioning; denormalization; multidimensional, star, and snow-flake design models) to address the data structuring challenges of the data warehouse development process.
- Address the challenges of data acquisition and the ETL (Extract/Transform/Load) process.
- Provide BI by extracting useful information from the data warehouse.
- Apply one or more basic data mining techniques to identify frequent patterns, associations, and correlations in the data.
- Apply one or more basic data mining techniques to make categorical predictions on new incoming data.

Course Components/Requirements

This course has a variety of assessment activities, such as the following: quizzes, lecture quizzes, discussions, and exams.

Quizzes

The quizzes account for half of your grade in this course and can be quite challenging to work through. Please let your instructor know if you need help, by using the Discussions to post your questions and reach out to the other students in the class for help and feedback.

Lecture Quizzes

Some of the commentaries include quizzes to assess your understanding of the material.

Discussions

Share questions or ideas about the readings in your textbook, the course materials, or quizzes. Reply to your classmates' posts.

Exams

There will be one comprehensive final exam. No make-up exams will be given.

Extra Credit Assignments

You can earn as much as 10% applied to your final grade by working on extra credit assignments. The extra credit assignments will be individualized and offered upon request. The first extra credit assignment is worth 4%; the second is worth 6%. Please let your instructor know if you are interested in working on an extra credit

assignment.

Grading

The following grading scale will be used to evaluate all course requirements and to determine your final grade:

Grades	Percentage Range
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	0 - 59%

Activities	Percentage of Grade
Discussions (12)	10%
Chapter 1 Part I Quiz (Lesson 1)	4.16%
Chapter 1 Part II Quiz (Lesson 2)	4.16%
Chapter 2 Part I Quiz (Lesson 3)	4.16%
Chapter 2 Part II Quiz (Lesson 4)	4.16%
Chapter 3 Part I Quiz (Lesson 5)	4.16%
Chapter 3 Part II Quiz (Lesson 6)	4.16%
Chapter 4 Part I Quiz (Lesson 7)	4.16%
Chapter 4 Part II Quiz (Lesson 8)	4.16%
Chapter 6 Part I Quiz (Lesson 9)	4.18%
Chapter 6 Part II Quiz (Lesson 10)	4.18%
Chapter 8 Part I Quiz (Lesson 11)	4.18%
Chapter 8 Part II Quiz (Lesson 12)	4.18%
Final Exam	40%
Total	**100%**