HIMT 375 Database Structures and Management Systems

Course Description and Overview

In this course, you will analyze and design databases to support computer-based health care information systems and develop and implement relational database management systems using SQL. Topics include data modeling techniques such as entity-relationship modeling, extended entity-relationship modeling, database constraints, database normalization techniques, and basic and advanced features of the database query language SQL.

Course Objectives

Upon completion of this course, you will be able to do the following:

- Understand basic and important concepts in modern database design such as the entity-relationship model, extended entity-relationship model, and database normalization techniques.
- Learn and master the fundamental features of the Structured Query Language (SQL) for querying databases, such as INSERT, CREATE, and simple SELECT queries.
- Learn and master the advanced features of the Structured Query Language (SQL) for querying databases, such as ORDERBY, GROUPBY, and nested SELECT queries.
- Design and implement databases in health care information systems.

HIM Curriculum Competencies

This course does not address any competencies directly.

Course Materials

- Required Textbook
- You will also need access to a Microsoft SQL server database to complete the eight lab assignments in this course. See Lab Assignments and Database Instructions for details.

Course Outline

- Introduction to database systems
- Data models
- Relational database model
- Entity Relationship (ER) modeling
- Introduction to the Structured Query Language (SQL)
- Advanced SQL

- Extended Entity Relationship (EER) Modeling
- Normalization of database tables

Course Activities

Reading Assignments

Each lesson contains a reading assignment from the textbook.

Commentaries

Each lesson includes a commentary from your instructor.

Practice Activities

Each lesson also includes a set of practice activities to prepare for the exams. Refer to the calendar to see which are required. For the required practice activities, post at least one comment in the discussion area. The comment can be about something you learned, a question you have, a concept that was particularly challenging for you to grasp and how you eventually worked through it. Your instructor will monitor the discussion area and answer your questions, but you are also encouraged to answer your classmates' questions.

Self-Check Quizzes

The six self-check quizzes are not graded and are for practice only. Feedback for each question is provided.

Lab Assignments

The course includes eight lab assignments that, together with the exams, count toward your final grade. In these labs, you will access a database. Please refer to the Lab Assignments section for more details on how to access the database and how to work the assignments. The calendar lists the due dates for the lab assignments.

Exams

The midcourse and final exams each include short- and long-answer questions similar to those in the course assignments.

Course Policies

Late submission of assignments is discouraged. The instructor reserves the right to take partial or full points off for late assignments. If you are going to be away, it is suggested that you get the assignments done and posted ahead of time to avoid losing points for late submissions.

Expected Time Commitment

For each course credit, you are expected to spend a minimum of 3 hours/week on course work. Therefore, for a four-credit course, at least 12 hours/week are expected. This is a general guideline that may vary depending on the assignments and/or quizzes.

Grading

Your final grade will be based on your performance in the following activities:

- 9 Practice Activity Comments: 9 points (1 point each)
- 8 labs: 40 points (5 points each)
- Midterm exam: 20 points
- Final exam: 31 points (comprehensive)

Grading Scale

Final grades will be assigned according to the following scale:

A: 90–100%
B: 80–89%
C: 70–79%
D: 60–69%
F: 0–59%

Depending on the overall performance of the class, the instructor may use lower cut-off points for some of the letter grades.

Course Calendar

Each assignment is due at 11:59 p.m. (CST) on the day listed on the calendar.

Lesson	Assignment	Due Date
Lesson 1	Lesson 1 Practice Activities and discussion post	
Lesson 2	Lesson 2 Practice Activities and discussion post	
Lesson 3	Lesson 3 Practice Activities and discussion post	
Lesson 4	Lesson 4 Practice Activities and discussion post	
Lesson 5	Lesson 5 Practice Activities and discussion post	

Lesson 6	Lesson 6 Practice Activities and discussion post	
Lesson 7	Lab 1	
Lesson 8	Lab 2	
Lesson 9	Lab 3	
	Lab 4	
Lesson 10	Lab 5	
	Midterm Exam	
Lesson 11	Lab 6	
	Lab 7	
Lesson 12	Lab 8	
Lesson 13	Lesson 13 Practice Activities and discussion post	
Lesson 14	Lesson 14 Practice Activities and discussion post	
Lesson 15	Lesson 15 Practice Activities and discussion post	
	Final Exam	