CIS 8040: Fundamentals of Database Management Systems
Spring 2022

Computer Information Systems
Robinson College of Business
Georgia State University

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Office Hours:	Before/after class or by appointment

This syllabus is a general plan. Deviations may be necessary.

Course Description

Developing and managing efficient and effective database applications requires understanding the fundamentals of database management systems, techniques for the design of databases, and principles of database administration. This course emphasized database concepts, development, use, and management in three main sections: database concepts, practice, and emerging trends. Relational database systems are the main focus. Practical design of databases and development of database applications using modern software tools will be emphasized.

Learning Objectives

At the conclusion of the course, the student should be able to:

- Create a valid conceptual model of a database application.
- Design and implement a relational database.
- Use SQL queries to complete database manipulation tasks.
- Understand major aspects of database administration and database applications.
- Understand data warehouses and their role in business intelligence.
- Appreciate trends in database technology, including big data management and privacy and security issues.
- Identify and explain the business impact of data management in today's global society.

Materials

Text: Kroenke, D., & Auer, D. J. (2018). *Database processing: Fundamentals, Design, and Implementation*, 15th Edition. Prentice Hall. You should be able to rent this book.

iCollege will be used to support this class. It will contain class announcements, lecture material, quizzes and exams, grades, and assignment dropboxes. Please check for announcements prior to class.

Exams

There will be two closed-book, in-class exams. The exams cannot be taken after the dates scheduled, except with permission from the instructor. The exams, in multiple formats, are designed to test the learning objectives of the course. There will also be two quizzes, which are closed-book, in-class quizzes.

Assignments

The assignments and brief are due at 4:00 pm the day of class. Late assignments will receive a 20% penalty, available for one week only after the due date.

Grading

Component	**Percentage**
Individual Examinations (2) Midterm: 20% Final: 25%	45%
Quizzes (2) Quiz 1: 10% Quiz 2: 10%	20%
Assignment 1	10%
Assignment 2	15%
Brief	10%
Total	**100%**

The following grading scale will be used to calculate the final grades: A+ (98-100%), A (93-97%), A- (90-92%), B+ (87-89%), B (84-86%), B- (80-83%), C+ (77-79%), C (73-76%), C- (70-72%), D (60-69%), F (less than 60%).

A student who withdraws prior to the midpoint in the semester or term will be awarded a "W". Per University policy, students who withdraw or are given an administrative withdrawal after the midpoint will automatically receive a "WF." The WF grade is assigned automatically by the GSU Registrar.

Descriptions of the assignments and brief are on iCollege under Assignments. Most quizzes and exams will be taken using the quiz function of iCollege. Please bring laptops to class for in-class work as well as to take the quizzes and exams. Install the lockdown browser.

GSU Academic Honesty Policy

All university and college regulations concerning academic honesty shall apply. In general, students are expected to recognize and uphold standards of intellectual and academic integrity. The university assumes as a minimum standard of conduct in academic matters that students be honest and that they submit for credit only the products of their own efforts. It is particularly important that students read and understand the portions of the University Policy on Academic Honesty that relate to plagiarism, unauthorized collaboration, falsification, and multiple submissions. The University Policy on Academic Honesty is explained in detail in the student handbook, http://codeofconduct.gsu.edu/. This Policy represents a core value of the University. All members of the University community are responsible for knowing and abiding by its tenets. Academic dis-honesty results in a grade of 'F' in this class. Students are expected to carefully review the online Policy prior to undertaking any research or other assignments.

Other Policies

Students who wish to request accommodation for a disability may do so by registering with the Office of Disability Services.

The selling, sharing, publishing, presenting, or distributing of instructor-prepared course lecture notes, videos, audio recordings, or any other instructor-produced materials from any course for any commercial purpose is *strictly prohibited* unless explicit written permission is granted in advance by the course instructor. This includes posting any materials on websites such as Chegg, Course Hero, OneClass, Stuvia, StuDocu or similar sites. Unauthorized sale or commercial distribution of such material is a violation of the instructor's intellectual property and the privacy rights of students attending the class and is prohibited.

Students are encouraged to wear face masks. If a student chooses not to wear a face mask there is no penalty.

Class Schedule

[Adjustments may be necessary]

Session 1	4 January	Introduction to course The nature of data Introduction to conceptual modeling	Read syllabus Chapter 1 (pp. 2-17, summary p.30)
Session 2	11 January	Conceptual modeling (Chen and Crow's Feet notations) Min/max cardinalities Data modeling process	Chapter 5 (pp.212-242, selected); pp. 245-251 Highline University Example
Session 3	18 January	Logical design Data warehouses and data mining	Chapter 6 (pp.267-290)

		Relational model characteristics Quiz 1 (closed book)	Chapter 2 (pp. 38-40)
Session 4	25 January	Database Design Transformation of conceptual models to logical models Midterm examination (closed book)	Chapter 6 (pp. 295-296)
Session 5	1 February	SQL: DDL / DML Single table queries Multiple table queries	Chapter 2 (pp.61-63; pp. 66-106, selected commands) Due: Assignment 1 (4:00 pm)
Session 6	8 February	Reverse engineering Disruptive technologies Quiz 2 (closed book)	Chapter 7 (pp.324-338) (p.340-351) Chapter 7 (pp.400-408)
Session 7	15 February	Big data, data privacy	Due: Assignment 2 (4:00 pm)
Session 8	22 February	Course wrap-up Brief presentations Final Examination (closed book)	Due: Brief (4:00 pm)