CS392 Database System (Online)

Instructor Information	Professor An Email: dranteaching@hotmail.com		
Term	December 13, 2021 - January 7, 2022	**Credits**	4 units
Course Delivery	The class will be delivered in the format of online. Other than recorded lecture videos, the instructor will arrange 2 hours' real-time interactions with students per week (via discussion forum, zoom meeting, and WeChat). The workload students are expected to complete to properly pass this course is about 15 hours per week.		
Required Texts (with ISBN)	Textbook: Coronel, C., & Morris, Steven (2019). Database systems: Design, implementation, and management. (13th ed.). ISBN: 9781337627900		
Prerequisite	Students are expected to have completed one of introductory computer programming courses.		

Course Overview

This is an introductory course to relational database design, implementation, usage, and administration. Topics covered include relational database model, entity relationship modeling, normalization, SQL, database design, database connectivity and Internet, data warehouse, transaction management and concurrency control.

Learning Outcomes

On completion the students should be able to:

1. Demonstrate a fundamental understanding of relational databases;

2. Demonstrate the capability of designing relational databases via ERD and normalization;

3. Demonstrate the ability to create and query databases with SQL;

4. Demonstrate a knowledge of transaction management, concurrency control, and crash recovery;

5. Be aware of current and emerging trends in database management and processing;

6. Access databases from other programming languages.

Grading Policy

Quizzes	10%
Assignments	45%
Midterm	20%
Final exam	25%

Grading Scale

Number grade	Letter grade	GPA
90-100	A	4.0
85-89	A-	3.7
80-84	B+	3.3
75-79	B	3.0
70-74	B-	2.7
67-69	C+	2.3
65-66	C	2.0
62-64	C-	1.7
60-61	D	1.0
$\leq$59	F (Failure)	0

Class Schedule

Date	Lecture	Readings	Online Teaching Arrangement
Day 1	Database and the Relational Model	Chapters 1 & 2	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 2	Relational Model	Chapter 3	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 3	E/R Diagram	Chapter 4	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 4	E/R Diagram and Transformation	Chapter 4	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 5	E/R Diagram Transformation	Chapter 4	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 6	Normalization	Chapter 6	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 7	Database Design Life Cycle	Chapter 9	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 8	SQL I	Chapter 7	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 9	SQL II	Chapter 7	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 10	Midterm		
Day 11	SQL III	Chapter 7	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 12	SQL IV	Chapter 8	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom

Day 13	SQL V	Chapter 8	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 14	Database Connectivity and Web Technologies	Chapter 15	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 15	Transaction Management	Chapter 10	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 16	Concurrency Control	Chapter 10	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 17	Locking Methods, Deadlocks	Chapter 10	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 18	Time Stamping Methods, Crash Recovery	Chapter 10	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 19	Object-Oriented Databases	Appendix G	approximately 50 minutes pre-recorded video lectures plus 50 minutes online interaction via Zoom
Day 20	Final exam		