Shanghai Jiao Tong University

CS392 Database System

Instructor Information:	Prof. An xiangdong.an@hotmail.com Office Hours: Determined by Instructor		
Term:	December 16, 2019 - January 7, 2020	**Credits:**	4 units
Class Hours:	Monday through Friday, 160 mins per teaching day		
Discussion Sessions:	2 hours each week, conducted by teaching assistant(s)		
Total Contact Hours:	64 contact hours (1 contact hour = 45 mins, 2880 mins in total)		
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, administration and security.

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

Attendance	5%
Quizzes	10%
Assignments	40%
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
≤59	F (Failure)	0

Class Schedule

Date	Lecture	Textbook Readings
Day 1	Database and the Relational Model	Chapters 1 & 2
Day 2	Relational Model	Chapter 3
Day 3	E/R Diagram	Chapter 4
Day 4	E/R Transformation	Chapter 4
Day 5	Normalisation	Chapter 6
Day 6	Database Design Life Cycle	Chapter 9
Day 7	SQL I	Chapter 7
Day 8	**Midterm**	
Day 9	SQL II	Chapter 8
Day 10	SQL III	Chapter 8
Day 11	Database Connectivity and Web Technologies	Chapter 15
Day 12	Transaction Management & Concurrency Control	Chapter 10
Day 13	Locking Methods, Deadlocks, Time Stamping Methods, Crash Recovery	Chapter 10
Day 14	Object-Oriented Databases	Appendix G
Day 15	**Final exam**	