



Shanghai Jiao Tong University

CS392 Database System (Online)

Instructor Information	Prof. An Email: xiangdong.an@hotmail.com		
Term	December 17, 2020 – January 8, 2021	Credits	4 units
Course Delivery	The class will be delivered in the format of online. Other than recorded lecture videos, the instructor will arrange 4 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 10-15 hours per week. Exams are closed-book and proctored under zoom-meeting camera.		
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	50%
Midterm	20%
Final exam	20%

Grading Scale is as follows

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	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 Diagram Transformation	Chapter 4
Day 5	Normalization	Chapter 6
Day 6	Database Design Life Cycle	Chapter 9
Day 7	SQL I	Chapter 7
Day 8	SQL II	Chapter 7
Day 9	Midterm	
Day 10	SQL III	Chapter 7
Day 11	SQL IV	Chapter 8
Day 12	SQL V	Chapter 8
Day 13	Database Connectivity and Web Technologies	Chapter 15
Day 14	Transaction Management & Concurrency Control	Chapter 10
Day 15	Locking Methods, Deadlocks	Chapter 10
Day 16	Time Stamping Methods, Crash Recovery	Chapter 10
Day 17	Object-Oriented Databases	Appendix G
Day 18	Final exam	