



蘇州大學  
Soochow University

## CS 367 Databases II

Summer 2024

**Course Credits:** 4

**Contact Hours:** 56 hours

**Instructor:** TBA

**Email:** TBA

### COURSE OBJECTIVES

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Important subjects covered in this advanced database systems course include advanced database design, query optimization, and transaction processing and recovery. Discusses modern approaches to data warehousing, integration, distributed systems, object-oriented databases, and multi-databases. Emphasizes real-world application through group projects that lead to the creation and execution of a database component. This extensive course sharpens students' analytical abilities, preparing them to engage with and contribute to the dynamic realm of contemporary database systems.

Upon Completion of this Course, students will be able to:

1. Understand complicated topics like as query optimization and transaction processing.
2. Learn about data warehousing, integration, distributed systems, and object-oriented databases.
3. Apply what they've learned in real-world circumstances.
4. Create practical skills by designing and implementing database components.
5. Develop analytical abilities for active participation in modern database systems.

### PREREQUISITES

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CS 226 Fundamental Databases, CS 258 Data Structures and Algorithms.

### GRADING

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Grades will be determined by accumulating points, with 100 points being the



maximum, as follows:

ITEM	POINTS
Quizzes	15 Points
Assignments	20 Points
Midterm	15 Points
Project	20 Points
Final Exam	30 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F$ .

We reserve the right to make adjustments to the overall grading policy.

## COURSE MATERIALS

### **Required Texts:**

Abraham Silberschatz, Henry Korth, S. Sudarshan, (2019), *Database System Concepts*, 7th Edition, McGraw Hill.

### **Recommended (Optional) Texts or Other Materials:**

None

## COURSE TOPICS

MODULE	TASKS
Module 1	<b>Topics:</b> Topic 1: Database Design Topic 2: Structure of Relational Databases Topic 3: Overview of the SQL Query Language Topic 4: Authorization <b>Assessments:</b> Quiz#1 Assignment#1



Module 2	<b>Topics:</b> Topic 5: Database Design Using the E-R Model Topic 6: Relational Database Design Topic 7: Object Orientation Topic 8: Application Development <b>Assessments:</b> Quiz#2 Assignment#2
Module 3	<b>Topics:</b> Topic 9: Data Analytics Topic 10: Data Warehousing Topic 11: Physical Storage Systems Topic 12: Database Storage Architecture <b>Assessments:</b> Midterm Project
Module 4	<b>Topics:</b> Topic 13: Storage Organization in Main-Memory Databases Topic 14: Query Processing Topic 15: Query Optimization Topic 16: Transactions <b>Assessments:</b> Quiz#3 Project due
Module 5	<b>Topics:</b> Topic 17: Concurrency Control Topic 18: Recovery System Topic 19: Parallel and Distributed Storage Topic 20: Advanced Application Development <b>Assessments:</b> Final Exam

## ATTENDANCE

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1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning



and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

### **LEARNING REQUIREMENTS**

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- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

### **TECHNOLOGY POLICY**

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The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

### **ACADEMIC INTEGRITY POLICY**

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Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.



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## **DISABILITY ACCOMMODATION**

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.