

California State University, Sacramento
College of Engineering and Computer Science
Department of Computer Science
Spring 2023

CSC 134 Database Management Systems

Instructor

Dr. Ying Jin, Professor
Office: RVR 5038
Email: jiny@csus.edu

Email Communication:

Please try to avoid sending long emails. It is more efficient to use office hours to solve your problem.

Course Description

Introduction to database system concepts and architecture; Entity-relationship model; ER to relational mapping; Relational algebra; SQL; Functional dependencies and normalization for relational databases; Disk storage, basic file structures, and hashing; Indexing structure for files; Introduction to XML, SQL injection attack, query processing, and transaction processing.

Course Outcomes

Students completing this course will be able to

1. Use Entity-Relationship (ER) model for conceptual design
2. Design a relational database by ER-to-relational mapping
3. Compose queries using relational algebra expressions
4. Use SQL for data definition and data manipulation
5. Analyze a relational database design using Normal Forms
6. Differentiate different types of index structures

Course Website

Canvas. PLEASE check the announcement on Canvas at least twice a day, especially before you are heading to the campus.

Office Hours

Monday, Wednesday, Friday: 3:00 pm – 3:35 pm
Tuesday: 1:45 pm -3:00 pm
Zoom: <https://csus.zoom.us/j/86074010546>

Textbook

Elmasri and Navathe, *Fundamentals of Database Systems*, 7th Edition, Addison-Wesley Publishing (Recommended)

Pre-Requisites

CSc 130 (with a C- or better))

Grading

Assignment: 28% (total number of assignments: 5)
Midterm Exam: 32%
Final Exam: 40%

Grading Scale

93-100 A	74-76 C
90-92 A-	70-73 C-
87-89 B+	67-69 D+
84-86 B	64-66 D
80-83 B-	60-63 D-
77-79 C+	59 or less F

Coursework

❖ Lecture

Students are expected to attend all lectures. Students are responsible for planning to get notes from other students if they are absent. Students are responsible for getting information from other students about any announcement announced during class period, if they are absent.

❖ Exam

Exams are closed book and in the classroom. MAKE-UP EXMAS ARE NOT GIVEN.

In case of medical emergency, 1) the student must inform the instructor BEFORE the exam by email AND by phone call (916-2786250). Leave a message if the instructor is not in the office.

2) Bring a doctor's note that excuses the student from the activity of taking an exam in the given day.

3) the notes must be emailed to the instructor within the same week that the exam is scheduled.

❖ Assignments

- All assignment submissions must be typed.
- There are five assignments in this semester. The assignment with the lowest score (one assignment) will be dropped. If you have any special situation that causes low scores, such as sickness, family emergency, family/neighbor/pet event, database server problem, network problem, computer problem, misunderstanding the question, fire, flood, power outage, this dropped assignment will cover this one-time exception. **No more exception will be accepted regardless of the reason. Requests for exceptions will not receive a response.**
- Completing all assignments is the best way to prepare for your exams. Ignoring one assignment may result in poor scores in your exams.
- All assignments and homework must be submitted through Canvas. Other types of submission, such as by email, will not be graded and will get a zero.
- If the submitted files are not readable or cannot be opened, you will get a zero as the grade.
- If an assignment requires submitting a certain type of file, for example PDF, submitting any other types of files will get a zero as the grade and the submission will not be graded.
- If there is more than one submission for the same assignment, the last one will be graded, *even if it means the late penalty will be applied.*

View grading feedback:

To view the grading feedback, please check BOTH 1) and 2):

- 1) Comment section
- 2) Click "feedback" button/link to see the comments embedded in your files.

Late assignments:

Some assignments are built based on the previous assignments. The specification of an assignment may contain the solution to the previous assignments. Late assignment will be accepted, the penalties are:

- within 24 hours after the due time: 80% of your original score
- More than 24 hours after the due time: Zero. The assignment will not be graded. Canvas will stop accept submission when you are 24 hours and 1 minute late. Don't wait until the last minute.

Recall that the assignment with the lowest score will be dropped.

❖ **Return of graded work**

Students can get graded work through Canvas. After the grading is posted on Canvas, students must contact the instructor within 5 working days AND before May 10, 2023, if there is any grading disagreement. **After 5 working days, the scores are final. After May 10, 2023, all scores are final and your request to discuss your grading will not receive a response.** Students are required to keep backup copies of all submitted work, and also keep all graded work, until after final grades are posted and accepted without disagreement.

Curving of Scores

At the end of the semester, I will adjust your grade based on the average of students' total scores. Each student's total score considers all assignments and exams according to the weight distribution in my syllabus. If the actual average is lower than 70 (C-), then I will bump it up to make the average=70. For example, if the average is 66, then I will add 4 points to everyone's total score before converting it to the ABCDF grade.

I will handle all the calculations after the final exam and post your grade on the student center. Please don't email me how many points to bump up – the email will not be answered. If there is a point adjustment because of low average scores, I will post an announcement on Canvas.

Campus Support:

(copied from the instructions from the university)

Services to Students with Disabilities (SSWD) (<https://www.csus.edu/student-affairs/centers-programs/services-students-disabilities/>) offers a wide range of accommodation services that ensure students with disabilities have equal access and opportunity to pursue their educational goals.

Student Health and Counseling Services (<https://www.csus.edu/student-life/health-counseling/>) staff are committed to continuing to provide exceptional service to our campus community. Though many students may be away from campus, most services are offered using secure remote technology.

If you are experiencing challenges with food, housing, financial or other unique circumstances that are impacting your education, help is just a phone call or email away! The CARES office provides case management support for any enrolled student. Email the CARES office at cares@csus.edu to speak with a case manager about the resources available to you. Check out the CARES website.

Course Outline (Tentative schedule)

Week 1	Database system concepts and architecture
Week 2.	Entity-Relationship model
Week 3	Relational Data model
Week 4	ER to relational Mapping
Week 5-6	Relational algebra
Week 7-8	SQL
Week 9	Spring break
Week 10	Midterm Exam (March 29, Wednesday, class room, class time)
Week 11	SQL
Week 11-12	Normalization
Week 13	Normalization, Disk storage and basic file structures
Week 14	Indexing Structure for files
Week 15	Hashing. Two phase merge-sort.
Week 16	Introduction to query processing, transaction processing
Week 17	Final Exam