CSCE 4350: Fundamentals of Database Systems

COURSE SYLLABUS, Summer 2025
Department of Computer Science and Engineering
University of North Texas

Instructor

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Office Hours: By Zoom https://unt.zoom.us/j/9876304928 and by appointment. **Please confirm your appointment by email.**
Office hours are for Summer 2025 only from May 19 to July 22, 2025.

Teaching Assistants: (Check on Canvas)

Name	Email	Office Hours
TBD	TBA	TBA

Communication Expectations: You will be expected to regularly check university email and attend class regularly. When you miss a class, you are expected to check the course calendar shortly after class to be aware of assignments, quizzes, and other materials. Questions not answered in class are best asked before or after class. For in-depth assistance with the course content, you are expected to meet with the IA/TA prior to meeting with the instructor. For quick questions, email is preferred, and you can expect a response within 48 hours during the work week (M-F 9am-4:30pm, no Saturday, no Sunday). For some questions or discussions not appropriate for the IA/TA, office hours are preferred. When you send emails, please use CSCE 4350 as part of your subject. Please do not expect a response over the weekend. Feedback on assignments, exams, and grades will usually be posted within two weeks after the due date.

Welcome to UNT (University of North Texas)!

As members of the UNT community, we have all made a commitment to being part of an institution that respects and values the identities of the students and employees with whom we interact. UNT does not tolerate identity-based discrimination, harassment, and retaliation. UNT's full Non-Discrimination Policy can be found in the UNT Policies section of the syllabus.

Course Description:

This course presents the main aspects of relational databases such as database design, query languages and normalization. It includes an overview of Relational Algebra and SQL, and the Oracle database management system. Students will consider several aspects involved in the design of databases such as avoiding data redundancy, security, data consistency and integrity. Students will have several hands-on activities with the Oracle system in which they will create databases, execute queries, check integrity constraints, and write procedures, functions, triggers, and programs in the PL/SQL programming language.

Course Structure

This course takes place 100% online. We may have several synchronous video conferences with links posted throughout the semester if needed. Other than that, your interaction with me and with your fellow students will take place on Canvas. There are 10 weeks of content that you will move through. I will open a new module of 1 or 2 weeks each. Participation in video conferences, if any, is optional. This course is not self-paced but self-directed and requires students to read the textbook, other course resources posted on canvas and practice the material independently. You have to complete in sequential order ALL activities and assignments listed in each of the modules and take three exams to successfully finish this course.

Course Prerequisites

Prerequisite(s): Programming Experience and Data Structures.

Course Objectives

Course outcomes are measurable achievements accomplished by completing a course. This course has 12 Course Learning Objectives:

Students will be able to:

1. Describe the fundamental concepts of relational databases such as database system, database management system, database architecture, data independence, database languages and the roles of people involved in database systems.
2. Demonstrate an understanding of the relational data model.
3. Analyze database requirements and determine the entities involved in the system and their relationship to one another.
4. Develop the logical design of the database using data modeling concepts such as entity-relationship diagrams.
5. Transform an information model into a relational database schema such as converting entity-relationship diagrams into relational tables.
6. Formulate, using relational algebra, solutions to a broad range of query problems.
7. Formulate, using SQL, solutions to a broad range of query and data update problems.
8. Manipulate a database using SQL.
9. Utilize a wide range of features available in a Database Management System package such as Oracle.

10. Use a database management system such as ORACLE to create, populate, constraint, update, insert and query a relational database.
11. Design programming code to create stored procedures, stored functions, triggers and packages that manipulate a relational database.
12. Improve the database design by normalization.

Main Course topics

Relational Model
Database Design
Relational Algebra
Query Processing
Procedural Language in SQL
Normalization

Required Texts

Required Textbook:

- Database Management Systems, Ramakrishnan, ISBN 0072465638.

Technical Assistance

Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

Rules of Engagement

Rules of engagement refer to the way students are expected to interact with each other and with their instructors. Here are some general guidelines:

- While the freedom to express yourself is a fundamental human right, any communication that utilizes cruel and derogatory language on the basis of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal, or state law will not be tolerated.
- Treat your instructor and classmates with respect in any communication online or face-to-face, even when their opinion differs from your own.
- Ask for and use the correct name and pronouns for your instructor and classmates.
- Speak from individual experiences. Use “I” statements to share thoughts and feelings. Try not to speak on behalf of groups or other individuals’ experiences.
- Use your critical thinking skills to challenge other people’s ideas, instead of attacking individuals.
- Avoid using all caps while communicating digitally. This may be interpreted as “YELLING!”

- Be cautious when using humor or sarcasm in emails or discussion posts as tone can be difficult to interpret digitally.
- Avoid using "text-talk" unless explicitly permitted by your instructor.
- Proofread and fact-check your sources.
- Keep in mind that online posts can be permanent, so think first before you type.

See these Engagement Guidelines (https://clear.unt.edu/online-communication-tips) for more information.

Course Requirements

Your course grade will be determined by a combination of the following:

- Weekly Posting Activities and Quizzes (online-discussions): 25%
- Quizzes: 10%
- Project: 15 %
- Exams: 50%
    - Exam 1: 15 %
    - Exam 2: 15 %
    - Exam 3: 20 %

Total 100%

Grading

A: 90-100% (Outstanding, excellent work. The student performs well above the minimum criteria.)
B: 80-89% (Good, impressive work. The student performs above the minimum criteria.)
C: 70-79% (Solid, college-level work. The student meets the criteria of the assignment.)
D: 60-69% (Below average work. The student fails to meet the minimum criteria.)
F: 59% and below (Sub-par work. The student fails to complete the assignment.)

Grading Scale: A=90, B=80-89.9, C=70-79.9, D=60-69.9, F=0-59.9 %.

Course Evaluation

Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course.

Course Calendar

CSCE 4350: Summer 2025

All Module i Assignments are due on Mi, but Exams are due on Ei.
All Module i Assignments have universal occasional extensions until Mi-ext (up to 72 hours), but Exams have extensions until E1-ext (up to 24 hours).

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5/18/2025	5/19/2025	5/20/2025	5/21/2025	5/22/2025	5/23/2025 M1	5/24/2025
5/25/2025	5/26/2025 Memorial Day	5/27/2025 M1-ext	5/28/2025	5/29/2025	5/30/2025 M2	5/31/2025
6/1/2025	6/2/2025 M2-ext	6/3/2025	6/4/2025	6/5/2025	6/6/2025 M3	6/7/2025
6/8/2025	6/9/2025 M3-ext	6/10/2025	6/11/2025 E1	6/12/2025 E1-ext	6/13/2025 M4	6/14/2025
6/15/2025	6/16/2025 M4-ext	6/17/2025	6/18/2025	6/19/2025 Juneteenth	6/20/2025 M5	6/21/2025
6/22/2025	6/23/2025 M5-ext	6/24/2025	6/25/2025	6/26/2025	6/27/2025 M6	6/28/2025
6/29/2025	6/30/2025 M6-ext	7/1/2025	7/2/2025 E2	7/3/2025 E2-ext	7/4/2025 Independence Day	7/5/2025 M7
7/6/2025	7/7/2025 M7-ext	7/8/2025	7/9/2025	7/10/2025	7/11/2025 M8	7/12/2025
7/13/2025	7/14/2025 M8-ext	7/15/2025	7/16/2025	7/17/2025	7/18/2025 M9	7/19/2025
7/20/2025	7/21/2025 M9-ext	7/22/2025 M10	7/23/2025 E3	7/24/2025 M10-ext and E3-ext	7/25/2025	7/26/2025

Occasional extensions are penalty free, and they intended for emergency and/or any other accomodation.
Students can used them as needed without contacting instructor.
There will be no other extensions.

Course Policies

Assignment Policy and Content Responsibility

You are expected to learn course materials and complete all readings and assignments on time. Students are responsible for all content presented in lecture slides, in the videos, and required readings from the textbook. All class materials will be posted on Canvas. There are several course assignments such as homework assignments, exams, weekly postings, and a group project. You need to solve the problems given and submit your answers by or preferably before the due date. Please do not work on course assignments the day before they are due. Getting sick the day before the due date, it will not give you an extension. However, most course assignments have a 2-day emergency penalty free extension labeled as "Available Until" in Canvas. The emergency time extension should be used only to complete an assignment submission and NOT used to just start working on the assignment. There are no further extensions after the emergency extension. WE DO NOT ACCEPT ASSIGNMENTS SUBMISSIONS BY EMAIL.

Examination Policy

Exams will be on the computer using the Canvas quiz system. Exam days are posted and are considered fixed. Missed exams: Exams cannot be missed without prior arrangements or later documented proof of extenuating circumstances. We do not have make up exams. Time will be limited, and all work will be individual. Exams will focus on the most recent material but are expected to be cumulative in scope.

Late Work

No late submission is accepted.

Project

There is a term group project in which you will implement a relational database system. No late submission will be accepted.

Extra Credit Options

There are no planned extra credit activities for this course. However, the instructor has the right to design at any time during the course an extra credit needed to enhance or promote course participation. In the unlikely situation that extra credit activity is designed, these will be totally optional. Students do not have to participate in an extra credit activity as a requirement to get an A in the course. These are not mandatory activities that cannot be substituted or make-up. They are optional.

Weekly Posting Activities (online-discussions)

Discussion assignments are weekly activities that track attendance/participation to the online course. Students just need to follow a series of one or more "how-to" style videos to post their answers. They are very brief "in-class like activities," and answers are provided in one or more series of videos (not homework style, not research). They will be due on Fridays but with a penalty-free emergency extension to Mondays. Most students

get 100% credit on them. It is suggested to post answers by Thursday so that students have enough time to reply/comment to other's posts.

Attendance Policy

While attendance will not be taken into grades, you will be expected to know and understand the requisite topics and concepts. Since this is an online class, you are expected to be active or "present" by participating at least in the weekly online discussions. You are responsible for checking announcements often to stay connected with the whole class about upcoming events, assignments, or activities. Also check out your Canvas Calendar for assignment due dates so you can plan your semester accordingly. There is no need to let the instructor know you have missed a class (weekly online discussion), or you will miss future classes; however, you are responsible for keeping up with the material covered in the class if you are not active. We do not have excused absence or permission to be absent. If a class is missed, you are expected to proactively reach out to classmates, the TA, or the instructor if there are any questions. Again, if you miss a class (weekly online participation), you are still responsible for knowing everything that took place. Your absence does not change the due date of an assignment. Additionally, being sick does not waive an assignment.

Grading Issues

Once a grade has been posted for a course assignment, grading issues need to be addressed with graders first. Do not contact the instructor unless the grading issue is not solved by graders. Additionally, we only have one week after a grade has been posted to address grading errors or any other issues. We cannot correct grades that have been posted on canvas for longer than one week.

Academic Integrity Policy

Cheating of any sort will not be tolerated in this course. All work turned in with your name on it must be your own work. Failure to adhere to these strict standards will cause disciplinary action that could be as severe as expulsion from the university. If it is determined a student cheated on any assignment in this course, they will receive an F for their final course grade and an academic integrity report will be filed with the Office of Academic Integrity. Further, UNT is now maintaining a database recording any acts of academic dishonesty available to employers. For more information see the UNT Student Academic Integrity Policy.

Course Penalties

Incurring any of the following penalties disqualifies you to receive any extra credit if available, and penalizes your grades as indicated next.

1. ***Cheating:*** Cheating on tests and programs will be dealt with very severely. You must make a diligent effort to prevent other students from seeing your test answers. If you take an exam in proximity with another classmate, keep your paper or computer screen covered and do not let your eyes wander during tests. You should not receive or give help to others while taking an exam. We also monitor responses to course assignments generated by AI resources such as ChatGPT.

***First offense of Receiving or giving help while taking an exam*= -**25% deducted from grade

***Second offense of Receiving or giving help while taking an exam*=**
0% in the exam. The exam will not be graded.

One or more incidents of cheating in exam= 0% in Exam

Cheating on a second exam= F in the course

2. ***Plagiarism:*** Plagiarism is a form of cheating. Copying someone else's program, changing a few lines, and turning it in as your own is plagiarism; thus, this is cheating. Each student writes his or her own programs. You should not receive or give help to others on any program that goes beyond help in deciphering syntax errors. **First time penalty = 0% in assignment, second time penalty=F in the course**.
3. Inappropriate multiple requests of changing a grade for any of the following statements or something similar: (1) Being in probation, (2) last semester, (3) core course, (4) financial situation, (5) Being sick, (6) suspended from the university, (7) family issues, (8) others.