

University of Texas at Tyler
Soules College of Business
Department of Computer Science
COSC 5360 – Database Design

Subject to Change

Course Information

COSC 5360 – Database Design Spring 2025

Class Meetings will be in-person on Tuesdays 9:30-10:50, COB 207

Please note that all Thursday classes are online via Zoom, unless otherwise mentioned

Instructor Contact

Instructor: Sara Memarian Esfahani

Office location: COB 315.04

Zoom Meeting ID: <https://uttyler.zoom.us/j/8432799050>

Office hours: Tuesdays and Thursdays 14:00 to 16:00 or Zoom by appointment

Email: Use the Inbox in Canvas (MUST include COSC 5360 – Database Design in the Subject Line)

Normally, I will reply to an email within 24 to 48 hours.

To ensure a quick response over the weekends, please email me no later than Friday mornings.

Occasionally I will be unable to respond within that time frame but will inform the class in advance.

Communication Expectations

The most convenient way to communicate with the instructor is through the Inbox in Canvas. Download the mobile app for your convenience.

Discussion Board Communication

Please post general course or assignment questions to the General Course Questions & Answers Discussion Topic. Students are encouraged to respond to their fellow classmates' questions. I will read all discussion postings and add comments/suggestions/questions as necessary to keep the discussion on topic. Specific topic instructions on discussions are provided in the forums when needed.

Canvas Notifications:

Receive instant notifications about course events, such as submissions, discussion messages, and announcements through canvas. Assignments and all deliverables will be graded and returned no later than one week after the due date.

About the Professor/Instructor

Welcome to **COSC 5360 – Database Design**! I am **Sara Memarian Esfahani**, your instructor for this course. I'm thrilled to have you in the class and look forward to getting to know you and your academic goals during your time at **UT Tyler**. Together, we will explore key concepts in **database design and analytics**, developing both theoretical understanding and practical skills. I'm confident we will have a rewarding learning experience as we collaborate and achieve great things throughout this course.

Course Description

This course offers an in-depth look at database design and analytics, combining theory with real-world practice. Students will learn the fundamentals of data management, how to design and maintain relational databases for analytics, and apply these skills in business scenarios. With hands-on experience, participants will be ready to use database analytics to improve decision-making and boost business efficiency by the course's end.

Course Structure

This course is a hybrid course that lasts 15 weeks (1 semester). See the course schedule table at the end of this file and on Canvas.

Course Objectives

By the end of this course, students will be equipped to:

- Grasp and articulate the key concepts, techniques, and practices in database design,
- Construct relational databases tailored for analytics applications,
- Develop and oversee databases within a commercial-grade setting, and
- Utilize database analytics to enhance contemporary business management and operations.

Course Topics

1. Database Systems and Data Models
2. The Relational Database Model
3. Entity Relationship (ER) Modeling
4. Advanced Data Modeling
5. Normalization of Database Tables
6. Introduction to Structured Query Language (SQL)
7. Advanced SQL
8. Database Design
9. Transaction Management and Concurrency Control
10. Database Performance Tuning and Query Optimization
11. Distributed Database Management Systems

Required Materials

Access Requirement: All students are required to purchase access to Cengage MindTap. This platform will be used extensively throughout our course for accessing interactive assignments, supplemental materials, and essential resources that are integrated directly into our Canvas course environment.

Purchase Instructions: You can purchase MindTap access either directly from the Cengage website or via the university bookstore. Make sure to purchase the correct access linked specifically to this course. Detailed purchase information and a direct link [insert specific link or further directions here] are provided for your convenience.

Canvas Integration: MindTap is fully integrated with our Canvas learning management system. Once you have registered and activated your MindTap account, you will access all MindTap materials directly through our course Canvas site. This integration is designed to provide a seamless learning experience, allowing you to access everything you need without having to manage multiple logins or platforms.

COURSE REQUIREMENTS AND GRADING:

Your grade will be determined based on your performance on the activities identified below. No make-up for exams, simulations, or homework will be given. It is highly likely that “extra-credit work” will be assigned to individuals as a replacement for, or in addition to, these components. All points will show up in Canvas. Be sure to review the grading schema below to determine your letter grade.

Individual Assignments: Weekly reading of the assigned chapter for each week. Also you are expected to complete and deliver 2 assignment in each week during the following 7 weeks of the class, with an overall of 12 assignments. All the students are expected to submit their original work. – Individual, untimed, open-book, open-notes assignments will contain objective questions, programming exercises, and/or short-answer questions to help students review and practice course concepts and skills. Late submission (within 1 days after due date) will incur a 20% deduction in score. Submission is closed after the grace period.

EXAMS: There will be only one final comprehensive exam during the semester. You will be tested on all material assigned or taught in this course which includes class slides, quizzes, videos, etc. Respondus Lockdown Browser is required to take all exams which require a webcam feature. Instructions are posted on canvas.

Also after completing each module you will be given a quiz that evaluates your learning outcomes of the corresponding chapter.

If you find that there is no grade recorded for submitted work, or if you want to dispute a grade, you must send your instructor an email about the problem **NO LATER THAN 2 DAYS** after the submission date.

GRADE CRITERIA: All course work is always due at 11:59 p.m., unless otherwise noted. If you have not finished your projects, submit whatever you have completed. You will earn credit for what you complete.

Assignments (Subject to change)	Points Possible (Approx.)
Class Quizzes (12 Q, each 25)	300
Assignments (12 Assignment, each 25)	300
Class Attendance and Professionalism	100
Exams (each 100)	300
Total Points Possible with no extra credit	1000

Total Points (%)	Letter Grade
900 & above	A
800 - 899	B
700 - 799	C
600 - 699	D
599 & below	F

Schedule (subject to change)
Due by Saturday 11:59 p.m. unless otherwise noted

Week	Date	Topic / Reading	Note
Week 1	1/14 1/16	Course Overview Introduction to Database Design	<ul style="list-style-type: none"> Understanding the Syllabus Introduce Yourself
Week 2	1/21 1/23	Database Systems Lab 1	<ul style="list-style-type: none"> Assignment 1
Week 3	1/28 1/30	Data Models Lab 2	<ul style="list-style-type: none"> Assignment 2 Quiz 2
Week 4	2/4 2/6	The Relational Database Model Lab 3	<ul style="list-style-type: none"> Assignment 3 Quiz 3
Week 5	2/11 2/13	Entity Relationship (ER) Modeling Lab 4	<ul style="list-style-type: none"> Assignment 4 Quiz 4
Week 6	2/18 2/20	Exam 1	<ul style="list-style-type: none"> Tuesday 8th in class No class Meeting on Thursday 20th

Week 7	2/25 2/27	Advanced Data Modeling Lab 5	<ul style="list-style-type: none"> • Assignment 5 • Quiz 5
Week 8	3/4 3/6	Normalization of Database Tables Lab 6	<ul style="list-style-type: none"> • Assignment 6 • Quiz 6
Week 9	3/11 3/13	Introduction to Structured Query Language (SQL) Lab 7	<ul style="list-style-type: none"> • Assignment 7 • Quiz 7
Week 10	3/18 3/20	Spring Break – No Class Meeting	
Week 11	3/25 3/27	Exam 2	<ul style="list-style-type: none"> • Tuesday 25th in class • No class Meeting on Thursday 27th
Week 12	4/1 4/3	Advanced SQL Lab 8	<ul style="list-style-type: none"> • Assignment 8 • Quiz 8
Week 13	4/8 4/10	Database Design Transaction Management and Concurrency Control Lab 9	<ul style="list-style-type: none"> • Assignment 9 • Quiz 9,10
Week 14	4/15 4/17	Database Performance Tuning and Query Optimization Lab 10	<ul style="list-style-type: none"> • Assignment 11 • Quiz 11
Week 15	4/22 4/24	Distributed Database Management Systems Lab 11	<ul style="list-style-type: none"> • Assignment 12 • Quiz 12
Week 16	4/29 5/1	Exam 3	<ul style="list-style-type: none"> • Exam 3 in class on Tuesday 29th

UT Tyler Student Resources

- UT Tyler Writing Center: Provides support for writing assignments and skill development. Contact: (903) 565-5995 | writingcenter@uttyler.edu
- UT Tyler Tutoring Center: Offers tutoring across various subjects to support academic success. Contact: (903) 565-5964 | tutoring@uttyler.edu
- Mathematics Learning Center (RBN 4021): An open-access computer lab for math students with tutors available to assist in early-career math courses.
- UT Tyler Counseling Center: Provides confidential counseling and support services for students. Contact: (903) 566-7254

Code of Conduct and Ethics

Disciplinary actions may be taken against any student involved in academic dishonesty, which includes but is not limited to cheating, plagiarism, collusion, or submitting work that is wholly or partially the work of another person. Engaging in any act intended to provide an unfair academic advantage or attempting such actions is prohibited.

Cheating includes but is not limited to:

- Copying from another student's test or assignment.
- Using unauthorized materials during a test.
- Failing to follow instructions given by the test administrator.
- Possessing unauthorized materials, such as notes or textbooks, during an exam.
- Stealing, buying, or soliciting test materials or answers.
- Collaborating with or seeking help from others during a test without permission.
- Discussing exam content with students who have yet to take the test.
- Revealing exam questions when instructed to keep them confidential.
- Substituting for another person in a test or coursework.
- Offering money or coercing others to obtain test materials.

- Falsifying research data, lab results, or academic work for credit.
- Damaging or misplacing university property to gain academic advantage.
- Providing false information, such as grades or achievements, for personal gain or to harm others.
- Plagiarism includes but is not limited to:
 - Using someone else’s work without proper citation and presenting it as your own.
 - Buying, receiving, or obtaining academic work and submitting it for credit.
- Collusion includes but is not limited to:
 - Collaborating with others on assignments without authorization.
 - Working with others to violate academic integrity policies.
- All submitted written work will be subject to plagiarism detection software review.

The instructor will post both UNOFFICIAL grade reports using Canvas

THREE BEFORE ME RULE: If you have any issues or questions about assignments, class policies and schedules, etc. and want to speak with me (the Professor), please remember the three before me rule as stated in the next sentence. You must have attempted at least three options before you come to me. For example: TA, tutor, grader, etc. You must tell me what you tried and the results, including screen prints of errors or printed error messages.

Name:-----

Signature:-----

Date: -----