Subject to Change

Course Information

CSCI 5346 – Database Analytics Summer 2024
Online Asynchronous Mode (7-week schedule)

Instructor Contact

Instructor: Sara Memarian Esfahani
Office location: COB 315.16
Zoom Meeting ID: https://uttyler.zoom.us/j/8432799050
Office hours: Mondays and Wednesdays 9:30 to 11:00 on Zoom by appointment
Email: Use the Inbox in Canvas (MUST include COSC 4364-5341 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 **CSCI 5346 – Database Analytics**. I am Sara Memarian Esfahani, the instructor for this course. I am excited to have you in this course and look forward to learning more about you and your academic career goals while at UT Tyler. Together we will explore a variety of topics within database design and analytics and we will journey through this course together to do great things.

Course Description

This course offers an in-depth look at database 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 an Online Asynchronous Mode delivered through 7-week schedule. See the course schedule table at the end of this file and on Canvas.

Course Pre-requisites and/or Other Restrictions
COSC 4325 or COSC 4360 or equivalent

Course Objectives
By the end of this course, students will be equipped to:
- Grasp and articulate the key concepts, techniques, and practices in database analytics,
- 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
Final Exam	400
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	5/13	Database Systems Data Models	• Quiz 1 and 2 • Assignment 1 and 2
Week 2	5/20	The Relational Database Model Entity Relationship (ER) Modeling	• Quiz 3 and 4 • Assignment 3 and 4
Week 3	5/27	Advanced Data Modeling Normalization of Database Tables	• Quiz 5 and 6 • Assignment 5 and 6
Week 4	6/3	Introduction to Structured Query Language (SQL) Advanced SQL	• Quiz 7 and 8 • Assignment 7 and 8
Week 5	6/10	Database Design Transaction Management and Concurrency Control	• Quiz 9 and 10 • Assignment 9 and 10
Week 6	6/17	Database Performance Tuning and Query Optimization Distributed Database Management Systems	• Quiz 11 and 12 • Assignment 11 and 12
Week 7	6/24	Final Exam	• Comprehensive

Code of Conduct and Ethics

Academic integrity must be exhibited in your academic work, methods and conduct. Course work for which you receive an individual grade must be your original, individual effort. If any evidence exists of copying, cheating, or any other forms of academic dishonesty on all, or part, of your graded course work, you (and any others involved) will be awarded a ZERO for that work. Sharing files also counts as academic dishonesty. A second incident will result in a grade of an "F" in this course and a recommendation for further action by the office of the Vice President for Student Development.

A few key points to remember:

I would like to point out some of the activities we have sanctioned (awarded "F" grade and sometimes even more, removed from dean's list, merit list etc.). I want to share this so that you know that we careintegrity of the degree you receive from UT Tyler.

1. In one of the semesters, some exams were conducted using Respondus lockdown browser and video monitoring. However, some students took advantage of a loophole and had help from resources outside the screen and camera. Our instructors viewed 120 hours of video recording and found a group of students involved in a coordinated plagiarism. All were sanctioned, with some losing even scholarships!
2. In one instance, a student outsourced all his assignments to a person outside this country. The assignments were flagged for abnormal activities and with the help of some technology providers we were able to trace the IP address. The student was sanctioned (awarded a "F" grade in the course))
3. In multiple instances, students have had to borrow a laptop from another student in the course and posted something as them because they had not logged out of Canvas. This is considered misconduct on the part of both students. DO NOT give another student access to your UTTyler accounts.

Almost exams and quizzes have multiple versions, and the numbers and options are different. So, if you use your peer – the chance of choosing the wrong answer is extremely high. In worst cases (it has happened in some instances), the student would have used the numbers and details.

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: -------------------------