UTD   **CS 6360.001 - Database Design**

INSTRUCTOR:
Nurcan Yuruk, Ph.D.
Office: ECSS 3.211
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Class meetings: MS Teams
Monday-Wednesday, 11:30am-12:45pm

Virtual office hours:
Monday, 10am – 11am
Wednesday, 10am – 11am

All timings are listed according to Central Standard Time (CST).

TA contact information and office hours will be posted on eLearning once a TA is assigned to the course.

Course Pre-requisites, Co-requisites, and/or Other Restrictions
CS 5343 - Algorithm Analysis and Data Structures or equivalent: Abstract data types: lists, stacks, queues, trees, search trees. Hashing. Priority queues: heaps. Sorting and searching. Graphs: representation and algorithms. Running-time analysis of algorithms and order notation.

Course Description
Topics: Introductory concepts: Data models, ER diagrams. Relational Model, Query Languages: Relational Algebra, Relational Calculus, SQL. Database Design Concepts: Functional dependencies, Normal forms. Data Organization, Index Structures. Query Optimization. Transaction Processing: Concurrency control, Deadlock prevention, Serializability, Recovery. Security issues. Case studies.

Student Learning Objectives/Outcomes
Study methods, principles and concepts that are relevant to the design of database systems. Analyze issues related to database systems from several perspectives (designer, programmer, user, administrator).

Required Textbooks and Materials
"Fundamentals of Database Systems", 7th Edition, R. Elmasri and S. B. Navathe.

Instructional Mode	**Remote**
	Please see below link for detailed information on each instruction mode: https://covid.utdallas.edu/students-families-info/spring-2021-registration/
Course Platform	We will use MS Teams for synchronous class sessions. Announcements, assignments and projects will be posted on eLearning system. Students will turn in their assignments/projects through eLearning portal. No email submissions will be accepted. Office hours will be held virtually on eLearning through Blackboard Collaborate.
Expectations	Regular class attendance and participation is expected and is the responsibility of each individual. Each class session will be recorded and will be made available on MS Stream for asynchronous access for those who cannot attend the live class session or opt for asynchronous mode of instruction at any given time throughout the semester (you will need to notify Instructor for the change). Even for asynchronous learning, you will still be required to follow course announcements, follow the quiz/exam schedule and turn in assignments based on the schedule set by the Instructor. You can find detailed information about asyncronous learning here: https://covid.utdallas.edu/response/faq/#asynchronous

Evaluation:
Your final grade for the course will be based on the following percentages:

Exam-1	20%
Exam-2	20%
Exam-3	15%
Quizzes	15% (5 quizzes)
Assignments	15% (5 assignments)
Final Project	15% (group project)

Letter grades will be assigned according to the following scale:

A: 93-100
A-: 90-92
B+: 85-89
B: 80-84
B-: 75-79
C+: 70-74
C: below 70

Tentative Course Schedule

Chapter 1, 2: Introduction to Databases Chapter 3: Entity Relationship Model Chapter 4: Enhanced Entity Relationship Model * Chapter 5: Relational Model Chapter 9: ER/EER to Relational Mapping Chapter 8: Relational Algebra *	
Exam 1	
Chapter 6: Basic SQL Chapter 7: Complex SQL * Chapter 14: Normalization * Chapter 15: Database Design Algorithms and Further Dependencies Chapter 10: SQL Programming (PL/SQL) *	
Exam 2	
Chapter 17: Indexing Structures for Files Chapter 18: Algorithms for Query Processing and Optimization Chapter 21: Introduction to Transaction Processing Chapter 22: Concurrency Control Techniques Chapter 24: NoSQL Databases – MongoDB	
Exam 3	

* Quizzes will be held on practical subjects.

Exams
All exams will be online.
This course will use Honorlock – an online exam proctoring tool. To successfully take an exam, you must have a web camera with microphone, a laptop or desktop computer (no tablets/phones), Chrome browser, a reliable internet connection and your photo ID. You will be prompted to install the Honorlock Chrome Extension (which you can remove after you finish the test). You will then access the exam within your eLearning course and go through the authentication process. The web camera will monitor you throughout your test. Please see the Testing Guidelines and Support Information for additional information.

Exam dates:
Exam-1: February 22
Exam-2: April 5
Exam-3: May 3

Exam time: 11:30am-12:45pm

Communication

The best way of communication with the Instructor and course TA is through email. Since classes are crowded, when you send an email, make sure you include your <u>course number</u>, <u>section number</u>, <u>net-id</u> and <u>full name</u> at the end of email message. Each student is responsible for the content/instructions of email communications. Student emails will be answered within 2 working days under normal circumstances.

Course Policies

- Assignments should be turned in no later than the deadline announced by the instructor of this class. Turn in what is completed by the deadline for partial credit. No late submissions will be accepted.

- You should do your own work on exams, projects and assignments. Copying another student's work is not acceptable. Any indication of cheating and/or plagiarism on an exam/assignment/project will be an automatic 0 (zero) for the exam/assignment/project for all students involved. Solutions copied from the internet, instructor's manual, etc. will be also given zero credit.

- There will be no makeup exams unless there is a serious conflict that prevents you to take the exam on scheduled date and time and prior notification of such a condition is required.

- If there are questions/doubts about grading, please contact course TA within one week of the grade announcement.

Course Access and Navigation

This course can be accessed using your UT Dallas NetID account on the [eLearning](#) website. Please see the course access and navigation section of the [Getting Started with eLearning](#) webpage for more information.To become familiar with the eLearning tool, please see the [Student eLearning Tutorials](#) webpage. UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The [eLearning Support Center](#) includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Class Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Class Materials

The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be down-loaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online envi-ronments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct.](#)

Distance Learning Student Resources

Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information.

Disability Services

It is the policy and practice of The University of Texas at Dallas to make reasonable accommodations for students with properly documented disabilities. However, written notification from the Office of Student AccessAbility (OSA) is required. If you are eligible to receive an accommodation and would like to request it for this course, please discuss it with me and allow one week advance notice. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.) are invited to contact the Office of Student AccessAbility for a confidential discussion. OSA is located in the Student Services Building, suite 3.200. They can be reached by phone at (972) 883-2098, or by email at studentaccess@utdallas.edu.

For University's policies and procedures including COVID-19 guidelines and resources, please see https://go.utdallas.edu/syllabus-policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Instructor.