ITSS 4380 Advanced Database Management

Class Information

Term	Fall 2024
Course Number	ITSS 4380.001
Class Meetings	The class will be in the classroom beginning August 19th, with no virtual option. Class Meeting times Monday and Wed 5:30-6:45 pm, JSOM 1.107

Instructor Information

Instructor	Timothy Stephens
Phone	972.883.5063
Email	*timothy.stephens@utdallas.edu* *Please include the course number and section number in all email correspondence.*
Office Hours	Office: JSOM 3.610 Please send me a note if want to meet. Normally virtual meetings are better option for me.
TA	TBD

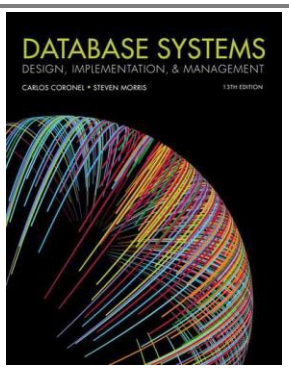
Course Modality and Expectations

Instructional Mode	The course will be taught face-to-face, with no virtual option. The instructor and students meet according to the schedule. A few times, the course will be taught online, or a recording will be made available. You will be notified beforehand about the changes.
Course Platform	The course will be delivered using a combination of MS Teams and eLearning.

Course Information

Course Description	To provide the student with an in-depth knowledge of advanced topics relating to database administration, database design, and database manipulation. Students will learn advanced SQL techniques and database administration techniques. At the end of the course, students will be able to effectively write advanced SQL queries and understand the tasks required to support a relational database. (3 credit hours)
Course Objectives	1. Articulate the difference between SQL and noSQL databases. 2. Explain the structure of a relational database. 3. Apply database administration functions to a relational database. 4. Construct queries to extract and report information from a relational database and a noSQL database. 5. Perform advanced database processing such as OLAP, triggers, and stored procedures on a relational database.
Prerequisites	ITSS 4300 Database Fundamentals

Course Materials

Textbook(s)	**Recommended:** *Database System: Design, Implementation, and Management* by Carlos Coronel, Steven Morris, Peter Rob, Course Technology, 13th Edition.  ***SQL Materials you will find useful:*** *Oracle SQL and PL/SQL Handbook: A Guide for Data Administrators, Developers, and Business Analysts* *John Adolph Palinski* *SQL Queries for Mere Mortals: A Hands-On Guide to Data Manipulation in SQL (2nd Edition), John L. Viescas, Addison-Wesley Professional* ***Other recommended textbooks for those interested in Oracle Certification:*** *Database Systems Using Oracle, 2/E, Nilesh Shah, Prentice Hall* *OCA: Oracle Database 11g Administrator Certified Associate Study Guide: (Exams1Z0-051 and 1Z0-052), Biju Thomas* *OCA Oracle Database 12c SQL Fundamentals I Exam Guide (Exam 1Z0-061): Roopesh Ramklass*

Grading Policy

Grading Policy	This course will feature a mix of activities and written and verbal assignments that may be in class or outside of class. The instructor will provide detailed instructions and the grading criteria for each assignment. Please consult the course schedule for deadlines. Your final grade will be based on the total score of the following: **Assignments - 40 points** **Project – 40 points** **In Class Exercises – 20 points** **This is subject to change based on the number of in class exercises, and**

	Assignments offered: in some cases, in-class exercises are offered due to time constraints and class pacing. Assignments are not weighted. You can determine your grade by adding up your total points at any given time and dividing it by the total possible points.
Final Grading Scale	**Letter Grade / Point Total:** **A** 93-100 **A-** 90-92 **B+** 87-89 **B** 83-86 **B-** 80-82 **C+** 77-79 **C** 73-76 **C-** 70-72 **D+** 67-69 **D** 63-66 **D-** 60-62 **F** 59 & below

Course and Instructor Policies

Attendance	I want you to be successful in this course, and the number one thing you can do to be successful is to attend class. Those who don't attend class regularly miss important concepts, details, and announcements. While in class, it is important to be present and engaged. **Class lectures and meetings are not recorded, and students are not allowed to record the sessions without permission of the instructor. Therefore, paying attention, taking notes, and asking questions is important.**
eLearning	eLearning will be used for class content (e.g., class slides and assignment descriptions) and the recording of grades. Slides will be posted before class is held. Class announcements (e.g., change in assignment dates) will be sent to the student email on record in eLearning. It is the student's responsibility to check eLearning and their UTD email accounts regularly.
Communication	This course utilizes online tools for interaction and communication – Email, discussion board, phone, and MS Teams. Student messages will be answered within 36 business hours under normal circumstances.
Exams	Although there are no exams currently planned for the course, if plans change, exams are scheduled well in advance. If you miss an exam, you will be given a zero! There is no makeup. If you have a legitimate, non-academic reason for missing an exam, you must provide verifiable documentation BEFORE the day of the exam. If you contact me AFTER the exam, it is considered missing the exam. Personal or business travel is not a legitimate reason for missing an exam. Missing an exam for travel reasons cannot be made up. Points will be deducted if you arrive late to the exam. If you arrive after a student has turned in an exam, you will not be permitted to take the exam, and you will receive a ZERO on the exam. I do not create exam review sheets; I review all materials in class before the exam and emphasize key points throughout the lectures. I also review the material in class. This is one of the incentives for coming to class and taking notes.
Quizzes and In-class exercises	Quizzes and in-class exercises must be completed in class; if you are absent from the class and a quiz and in-class exercise is given, these cannot be made up.
Assignments	Written assignments must generally adhere to the APA style guide of formatting, citing, and referencing. Descriptions of assignments will be posted as they are assigned. All assignments will be submitted via eLearning. Please be careful when using Generative AI. While it is a useful tool, your grades and evaluations will be determined by your final product. Do not directly copy/paste responses. If you do use AI, you will be required to show the tool you used, your queries, and the results of those queries. Word of caution: double-check your assignment submissions. I do not allow resubmission. It is very important to double-check your work and your submission before submitting.

Late Work	All assignments are due on the specified date. **I do not accept late assignments. Why?** Deadlines in the professional world are not a moving target. Missed deadlines affect product delivery, professional reputations, and revenue. Please plan accordingly. For these reasons, late work or incomplete work, is not acceptable in this course EXCEPT in the most extreme and unlikely circumstances.
Grading	You are encouraged to ask questions, raise issues, and make observations about homework; please be advised that if you have a question or issue with your assignment grade**, your entire assignment is subject to re-review (re-grading),** which may or may not result in additional point deductions. General grading criteria can be found in eLearning. Assignment-specific grading criteria will be included with the assignment instructions.
Final Course Letter Grades	Final course letter grades are based solely on your performance on the graded assignments, exams, projects, and/or attendance. ***No bonus points, curves, extra credit, or assignments are offered.*** Do not assume that final grades will be rounded to the nearest whole number.
Classroom Conduct	I strongly encourage class discussion, questions, and enthusiasm about the course material. Please engage in class discussions. I ask that you be respectful during class and respectful to your peers who are part of the learning environment. This means no talking to others during class presentations, silence your phone, don't take calls in class.
Academic Integrity	DO NOT CHEAT, and DO NOT PLAGIARIZE. All homework and exams are to be individual efforts. You are not to collaborate with other students or to discuss homework or assignments with other students before submission. Copying homework, assignments, or exams, in whole or in part, from other students or assignments from previous semesters is considered an act of academic dishonesty. Sharing your completed homework with another student is also considered academic dishonesty. All work should demonstrate the same professional and ethical standards expected of you in the workplace, including proofreading and editing carefully all work you submit in class. Professionalism and personal responsibility mean using appropriate source citations to avoid violations of copyright and academic honesty, even if those violations are inadvertent. The University is committed to academic excellence and expects academic honesty from all University community members. Academic honesty includes adherence to guidelines established by the instructor for both individual and group work. **It prohibits representing the work of others to be one's own (plagiarism); receiving unauthorized aid on an assignment (cheating); and using similar papers or other work products to fulfill the obligations of different classes without the instructor's permission.** Any student engaged in academic dishonesty will be subject to disciplinary action. All cases of academic dishonesty will reported directly to Judicial Affairs. My recommendation for acts of academic dishonesty will be an F in the course. The importance of academic honesty and my recommended sanctions are emphasized during class, in emails, and on the exams and assignments.

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. The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. 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 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. Suppose the instructor or a UTD school/department/office plans any other uses for the recordings. In that case, consent of the students identifiable in the recordings is required before such use unless an exception is allowed by law. Failure to comply with these University requirements violatesthe 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 downloaded 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 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.
Academic Support Resources	The following link lists the University's academic support resources for all students. Please go to http://go.utdallas.edu/academic-support-resources.
University Policies & Procedures	For information regarding general University policies and procedures, please go to http://go.utdallas.edu/syllabus-policies. These policies include, but is not limited to, Sharing Confidential Information, Student Conduct and Discipline, Social Media Use, Academic Integrity, Withdrawal from Class, Student Grievance Procedures, Incomplete Grade Policy, Accommodations for Students with Disabilities and much more.

Course Schedule, Assignments, and Due Dates

*This is a **tentative** class schedule; changes to the schedule will be posted in eLearning*

WK	DATE	CONTENT	READINGS	ASSIGNMENTS
1	8/19,21	Introduction to the course & Review: Relational Database Concepts	DB Text* CH 2,3,4	
2	8/26,28	Database Manipulation: SQL I – SQL Fundamentals	Handout	
3	*No Class 9/2 Labor Day* 9/4	Logical Database Design – ER/EER	DB Text* CH 4	**Assignment 1**
4	9/9,11	Logical Database Design (Cont.) Database Manipulation: SQL II Advanced SQL	DB Text* CH 4,5 DB Text* CH 7	**Project Assignment**
5	9/16,18	Normalization Database Manipulation: SQL II Advanced SQL	DB Text* CH 6	**Project Milestone 1**
6	9/23,25	Database Manipulation: SQL III Advanced SQL	DB Text* CH 8	**Assignment 2**
7	9/30,10/2	Database Manipulation: SQL IV Stored Procedures	DB Text* CH 8	
8	10/7,9	Database Manipulation: SQL IV Triggers and Views	DB Text* CH 8	**Project Milestone 2**
9	10/14,16	Database Manipulation: SQL VI Analytical Processing	DB Text* CH 8	**Assignment 3**
10	10/21,23	Database Administration: Performance Tuning and Access Rights		**Project Milestone 3**
11	10/28,30	Big Data Analytics – No SQL	Handout	**Assignment 4**
12	11/4,6	Big Data Analytics – No SQL	Handout	
13	11/11,13	Big Data Analytics – No SQL	Handout	**Project Milestone 4**
14	11/18,20	Big Data Analytics – No SQL	Handout	
	11/24-20	No Class – Fall Break and Thanksgiving	Handout	
15	**12/2,4**	**Course Wrap-up, Project Presentations**		**Assignment 5** **Project Milestone 5**

** Database System: Design, Implementation, and Management* by Carlos Coronel, Steven Morris, Peter Rob, Course Technology