Course Syllabus – Fall 2023

Course Information

CS/SE 4347.001 – Database Systems

Term: **Fall 2023**

Days and Time: **M W 10:00am – 11:15am**

Location: **ECSW 1.355**

Professor Contact Information

Dr. Nidhiben Solanki

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Office Location: ECSN 2.918

Office Hours: M W : 1:00 pm – 2:15 pm in-person only

Friday : 10:00 am – 11:30 am via MS Teams only

TA Information: TBA

Course Pre-requisites, Co-requisites, and/or Other Restrictions

CE 3345 or CS 3345 or SE 3345 or TE 3345

Course Description

This course emphasizes the concepts and structures necessary for the design and implementation of database management systems. Topics include data models, data normalization, data description languages, query facilities, file organization, index organization, file security, data integrity, and reliability. (3 Semester hours)

Student Learning Objectives/Outcomes

1. Understand Data Modeling
2. Understand the Relational Model and theory
3. Understand normalization of relations
4. Gain a fundamental understanding of SQL programming
5. Understand and protect against SQL attacks
6. Understand data organization methods, indexing, and query processing
7. Understand database integrity and concurrency

Required Textbooks and Materials

Fundamentals of Database Systems (7th Edition) by Ramez Elmasri, Shamkant B. Navathe
ISBN-13: 978-0133970777 ISBN-10: 0133970779

Assignments & Academic Calendar

Exams: There will be three exams during the course. Test material will be taken mainly from conducted classes. Details will be announced in the class.

Assignments: There will be regularly assigned reading and homework. Reading assignments should be done before the class session.

Project: A team project is to be a collaborative effort with one or two other students (Min: 2 , Max: 3 students. Details will be announced in the class.

Class Participation: In each class, you will be asked to submit a simple question covered during the class. You are required to submit that by 6:00pm of the next day on eLearning to get class participation credits.

Grading Policy

(including percentages for assignments, grade scale, etc.)

The grade each student will earn from this class will be based on a weighted score calculated by using the following table:

Exam I	15%	
Exam II	20%	
Exam III	15%	
Assignments	25%	(5 assignments)
Project	20%	
Class Participation	5%	

Grades will be assigned according to the scale using the following table:

Weighted Score	Grade
97.0 – 100.0	A+
93.0 – 96.9	A
90.0 – 92.9	A-
87.0 – 89.9	B+
83.0 – 86.9	B
80.0 – 82.9	B-
77.0 – 79.9	C+
73.0 – 76.9	C
70.0 – 72.9	C-
67.0 – 69.9	D+
60.0 – 66.9	D
Below 60.0	F

Course & Instructor Policies

(make-up exams, extra credit, late work, special assignments, class attendance, classroom citizenship, etc.)

- All assignments and exams (other than the term project) are to be individual efforts. Please do not collaborate with other students. Copying of assignments or exams, in whole or in part, from other sources will be considered an act of scholastic dishonesty. This policy includes copying from other students, from assignments from previous semesters or from the Internet.
- There will be no makeup exams under normal circumstances.
- Late submission panelties for assignments after due date:

< 1 day	10%
> 1 day and <= 7 days	25%
> 7 days and <= 15 days	50%
> 15 days	100%

Tentative Schedule

Week	Date	Topic	Book Reference	Assignment/ Due Date
1	08/21	Class Introduction		
	08/23	Introduction	1, 2	
2	08/28	Introduction, Data Modeling	1, 2	
	08/30	Data Modeling (ER/EER Diagram)	3, 4	HW1
3	**09/04**	**Labor Day – No Class**		
	09/06	Data Modeling	3, 4	Due: HW1
4	09/11	Data Modeling, ER/EER to Relational Mapping	4, 9	HW2
	09/13	ER/EER to Relational Mapping	9	
5	09/18	ER/EER to Relational Mapping, Review Exam - I		Due: HW2
	09/20	**Exam I**		
6	09/25	SQL Programming Fundamentals	5, 6, 7, 8	
	09/27	SQL Programming Fundamentals	5, 6, 7, 8	
7	10/02	SQL Programming Fundamentals	5, 6, 7, 8	HW3
	10/04	SQL Programming Fundamentals	5, 6, 7, 8	
8	10/09	SQL Attacks and Protection		Due: HW3
	10/11	Normalization of relations	14, 15	
9	10/16	Normalization of relations	14, 15	HW4
	10/18	Normalization of relations	14, 15	Project
10	10/23	Normalization of relations	14, 15	Due: HW4
	10/25	Normalization of relations, Review Exam -II	14, 15	
11	**10/30**	**Exam II**		
	11/01	Data Organization, Inexing and Query Processing	16, 17, 18, 19	
12	11/06	Data Organization, Inexing and Query Processing	16, 17, 18, 19	
	11/08	Data Organization, Inexing and Query Processing	16, 17, 18, 19	HW5
13	11/13	Data Organization, Inexing and Query Processing	16, 17, 18, 19	
	11/15	Data Organization, Inexing and Query Processing	16, 17, 18, 19	Due: HW5
14	**11/20**	**Thanksgiving Holidays– No Classes**		
	11/22			
15	11/27	Database Integrity and Concurrency	20, 21, 22	
	11/29	Database Integrity and Concurrency	20, 21, 22	Due: Project
16	12/04	Database Integrity and Concurrency, Review Exam -III	20, 21, 22	
	12/06	**Exam III**		

The instructor reserves the right to modify this calendar as she deems necessary.

Class Attendance

The University's attendance policy requirement is that individual faculty set their course attendance requirements. Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes.

Class Participation

Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

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.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students. Please see http://go.utdallas.edu/academic-support-resources.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please review the catalog sections regarding the credit/no credit or pass/fail grading option and withdrawal from class.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

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