University of Texas at El Paso

Department of Computer Science

CS 4342 Database Management - Spring 2019

Time and Location: TR 1:30 -2:50 PM in CRBL C205 **Textbook:** Fundamentals of Database Systems (Seventh Edition preferred). Ramez Elmasri and Shamkant Navathe. Ed. Addison-Wesley. ISBN10: 0136086209.	**Instructor:** Monika Akbar (makbar@utep.edu) **Office:** CCSB 3.0422 **Office Hours:** TR 3:00 – 4:00PM or by appointment **TA:** Ismael Villanueva Miranda (ivillanueva5@miners.utep.edu) **TA Office Hours:** TBA **Location:** CCSB 1.0706

NOTE: When contacting the instructor or TA by email, please use in the subject the prefix [CS4342**]**.

Course Catalog Description: Introduction to data base concepts, hierarchical, network and relational data models, data description and query languages, file and index organization, and file security and integrity.

Course platform: All the course materials will be available through **Blackboard (Bb)**. Please check Bb regularly to stay updated with the class.

Prerequisites by Topic: CS 2302 with a grade of "C" or better

Final Exam: During the last class Thursday, May 9th.

Topics

The topics covered in this course include:

1. Introduction to Database Systems - Past and current.
2. Database System Concepts and Architecture.
3. Entity Relational Model.
4. Relational Model and Relational Algebra.
5. Database Design Theory and Normalization.
6. SQL.
7. Web Database Programming using PHP.
8. Beyond relational databases.

Grading

Grades are communicated to students in a timely manner. *It is the students' responsibility to keep track of their grades by compiling the grades they receive*. The approximate percentages are as follows:

1. Exams 50%.
2. Project and Assignments including presentations 40%.
3. Class participation and activities 10%.

The nominal percentage-score-to-letter-grade conversion for CS 1301 is as follows:

- 90% or higher is an A
- 80-89% is a B
- 70-79% is a C
- 60-69% is a D
- Below 60% is an F

Expectations

Class Participation: Attendance at and participation in all lecture sessions are critical factors of your success in this course. Students should be **on time** for all scheduled sessions and **attend the entire session**. Attendance will be taken at every session and will count towards your class participation grade. *Students should notify the instructor prior to missing a session if at all possible, and certainly right after if earlier was not possible.*

Learning Outcomes

Course Outcomes: Divided into the following three broad levels of Bloom's taxonomy:

Level 1: Knowledge and Comprehension. Level 1 outcomes are those in which the student has been exposed to the terms and concepts at a basic level and can supply basic definitions. The material has been presented only at a superficial level. Upon successful completion of the course, students will be able to:

1a. Describe relational databases, how they have been used in the past, and how they are used currently to implement solutions in technology.
1b. Define a database management system.
1c. Describe the problems the second generation of databases solved

Level 2: Application and Analysis. Level 2 outcomes are those in which the student can apply the material in familiar situations, e.g., can work a problem of familiar structure with minor changes in the details. Upon successful completion of the course, students will be able to:

2a. Differentiate between first-generation and second-generation database systems.
2b. Identify different architectures where database systems are used (e.g., n-tier).
2c. Apply relational algebra and set theory that are supported in the relational model.
2d. Use a relational query language (PL/SQL) and a RDBMS.
2e. Administer a database.
2f. Normalize a database using the 1st, 2nd, and 3rd normal forms.
2g. Apply techniques to optimize search/retrieval (indexes, and clusters).
2h. Justify why one method is more useful than another, or be able to choose a method based on specified characteristics.

Level 3: Synthesis and Evaluation. Level 3 outcomes are those in which the student can apply the material in new situations. This is the highest level of mastery. Upon successful completion of the course, students will be able to:

3a. Design a relational database schema from a problem statement to conceptual/logical/physical database design.
3b. Design and code an interface that works with a normalized database, using the information read and discussed in class as well as the text.

Standards of conduct

Scholastic Dishonesty: Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but not limited to cheating, plagiarism, collusion, submission for credit of any work or materials that are attributable to another person.

Cheating is copying from the test paper of another student. Communicating with another student during a test to be taken individually. Giving or seeking aid from another student during a test to be taken individually. Possession and/or use of unauthorized materials during tests (i.e. crib notes, class notes, books, etc.). Substituting for another person to take a test. Falsifying research data, reports, academic work offered for credit.

Plagiarism is using someone's work in your assignments without the proper citations. Submitting the same paper or assignment from a different course, without direct permission of instructors. To avoid plagiarism, see: http://sa.utep.edu/osccr/wp-content/uploads/sites/8/2012/09/AvoidingPlagiarism.pdf.

Collusion is unauthorized collaboration with another person in preparing academic assignments.

NOTE: When in doubt on any of the above, please contact your instructor to check if you are following authorized procedure.

Special accommodations

If you have a disability and need classroom accommodations, please contact the Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.