

University of Texas at El Paso
Department of Computer Science
CS 4342 Database Management - Fall 2016

Instructors:

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Class time: Tuesdays and Thursdays, 1:30- 3:00pm

Location: CCSB 1.0705

Office hours: Tuesdays and Thursdays, 12:30-1:30pm and 3:00-5:00pm (Natalia Villanueva) and by appointment outside this time.

Please use email to contact instructor.

Teaching Assistant: Erick Garcia, e-mail: egarcia87@miners.utep.edu

TA Office hours: Mondays and Wednesday 4:00-5:30 in the TA Room and by appointment outside this time.

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 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.

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.
- 9.

Grading

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

Textbook

Fundamentals of Database Systems (Seventh Edition preferred but also Sixth Edition). Ramez Elmasri and Shamkant Navathe. Ed. Addison-Wesley. ISBN10: 0136086209.

Standards of conduct

You are expected to conduct yourself in a professional and courteous manner, as prescribed by the UTEP Standards of Conduct.

Graded work (for example, homework or exams), is to be completed independently and should be unmistakably your own work (or, in the case of pair work, your pair's work). You may not represent as your own work material that is transcribed or copied from another person, book, or any other source, such as a web page. Professors are required to—and will—report academic dishonesty and any other violation of the Standards of Conduct to the Dean of Students.

Academic 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.