Course Syllabus

CS 4347 Database Systems; Spring 2013; TR 5:30-6:45; ECSN 2.112; URL: utdallas.edu/~rbk/teach/db/

Professor Contact Information

Balaji Raghavachari; (972) 883-2136; rbk@utdallas.edu; ECSS 4.225; Office hours: TR 3:30-5:00 PM

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

CS 3345 or equivalent (Data structures and algorithms): 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).

- 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 data organization methods, indexing, and query processing
- 6. Understand database integrity and concurrency

Required Textbooks and Materials

"Fundamentals of Database Systems," 6th Edition, R. Elmasri and S. B. Navathe, Addison-Wesley Inc.

Assignments & Academic Calendar

Exam 1: February 21 (Thu); Exam 2: April 4 (Thu); Final Exam: 5:00-7:00 PM, May 9 (Thu)

Gradi	ng Policy
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Homework total	Project score	Exam total	Guaranteed Grade
> 80%	> 90%	> 90%	А
> 75%	> 80%	> 80%	В
> 65%	> 65%	> 65%	С

Course & Instructor Policies

- Assignments are due in class on the specified date. Turn in what is completed by the deadline for partial credit. No late submissions will be accepted.
- All submissions must be your own work. Identical assignments will not be accepted. Solutions copied from the internet, instructor's manual, etc. will be given zero credit.
- Regular class attendance and participation is expected and is the responsibility of each individual. There is a strong correlation between regular class attendance and good performance. If a student should elect not to attend a class, (s)he is responsible for any handouts, announcements, reading material and contents of missed lectures.
- Grades are determined by the scores in three categories: homeworks, project and exams. For example, if a student gets 82% in Homeworks, 95% in Project, and 86% in Exams, then a grade of B or better is guaranteed. The grade is likely to be A- and will be decided by the instructor.