

King Fahd University of Petroleum and Minerals
College of Computer Science and Engineering
Information and Computer Science Department

ICS 541 – Database Design and Implementation

COURSE DESCRIPTION

Review of database concepts. Database design: requirements analysis, conceptual design, maintenance, and performance monitoring. Various types of database systems such as logic, object-oriented and federated. Issues in database systems, current research trends. The student is expected to carry out a project on the design and implementation of a real life databases or the development of a database tool, or research paper good enough to be accepted by a conference.

PREREQUISITES

- ICS 334 OR Consent of the instructor

TEXT BOOK

- Database Systems: The Complete Book; Hector Garcia-Monila, Jeffrey D. Ullman, Jennifer Widom, 2002, Prentice Hall (Required)
- *Fundamentals of Databases Systems* by Elmasri Navathe; 3rd Ed, 2000, Addison Wesley, (Optional)
- *Database System Concepts* by Silberschatz, Korth, and Sudarshan; 4th Ed, 2002, McGraw Hill (OPTIONAL)
- Some handouts or links regarding various topics will be provided on the course website

Grade Distribution

Activity	Weight	Date	Place
Home work	10%		
Paper Presentation	5%		
Project	25%		
Major 1	15%	Mar. 14	22/119
Major 2	20%	Apr. 25	22/119
Final	25%		

Course Outline

Topic Number	Topic	Lectures
1	Recap	2
2	XML	3
3	Data Storage	2
4	Representing Data Elements	2
5	Index Structures	3
6	Query Execution	
7	Query Compiler	
8	Coping with Failure	
9	Transaction Mgmt and Concurrency control	
10	Information Integration	
11	Text retrieval	
12	TBA	

Important Notes:

1. Attendance is taken at the beginning of the class.
2. Missing nine classes will result in a **DN** grade in the course. Number of absences will be posted in the WebCT.
3. No warning will be given prior to assigning a DN grade.
4. Official excuse for any absence of a class must be presented not later than one week after that class.
5. Quiz grades will be submitted in the next class after the quiz. Exam grades will be submitted a week after the exam date.
6. Assignments must be submitted on the due date. **No** late submission.
7. No make up for exams or any other class work will be made.
8. The best 3 out of 4 quizzes will be considered in the final grade.
9. All course material including grades will be posted in the WebCT.
10. Plagiarism, copying and other anti-intellectual behavior are prohibited by the university regulations. Violators may have to face serious consequences.