

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

Course Objectives

- To understand the basic concepts of Database, RDBMS and Database Theory.
- To understand Database Design, Development, Implementation
- To understand and experience Database Software Development using Applications.
- Get an experience to work in a team environment

Catalog Description

Basic database concepts. Conceptual modeling. Relational data model. Relational theory and languages. Database Design. Database security and integrity. Introduction to query processing and optimization. Introduction to concurrency and recovery.

Prerequisite: ICS 202 – Data Structures

Textbook

Recommended:

“Fundamentals of Database Systems” by R. Elmasri and S. B. Navathe, 3rd edition, Addison-Wesley, 2000; ISBN: 0-201-54263-3.

Reference:

“Database System Concepts” by Henry F. Korth and Abraham Silberschatz (K&S), 4th edition, McGraw-Hill, ISBN: 0-07-112268-0

“Oracle PL/SQL, Developer 6i” by Ejaz Ahmed, 3rd Edition (Available at KFUPM library)

Course Outline

S#	Topic	Chapter
1	Basic Database Concepts and Database Architecture	[1, 2]
2	The Relational Data Model	[7.1 – 7.3]
3	Relational Algebra, SQL	[7.4 – 7.6] , [8]
4	Conceptual Modeling and Mapping (WED classes)	[3, 4, 9.1 – 9.2]
5	Relational Calculus & QBE *	[K & S]
6	Functional Dependencies and Normalization (Vacations)	[14]
7	Information Models & Systems, Practical Database Design	[16.1-16.3, 16.5]
8	File Organization, Physical Database Design & Performance Tuning	[5, 6, 16.4]
10	Advanced Topics	

* Course material is selected from a reference book (K& S).

General Policies

Attendance

- Regular attendance is the university requirement. Attendance will be taken in the beginning of every class.
- Whenever the number of unexcused absences exceeds **20%** of the held classes, the grade DN will be reported without any formal warning.
- Final exam will be selective comprehensive.

Home Work Submission

- The home work can be submitted in a class on the due date.
- Any late submission will not be accepted.

Class Discussion

- Participation in class discussion is very much encouraged. Asking questions during lectures helps both the instructor and the student. The instructor gets the feedback and the students get the point clarified.

Grading Issues

- All the grading issues must be resolved within a week after the return of graded material.
- Exam grades will be submitted a week after the exam date.
- The best 4 out of 5 quizzes will be considered in the final grade.

Make Ups

- No make up exams will be given.