**Kingdom of Saudi Arabia**

**College of Computer and Information Sciences**

**Department of Computer Science**

**Course Policy**

**Title: Advanced Database Systems**

**Code: CSC581**

**Credits: 3 (3 hours-Lecture) Required Course Academic Year: 1434/1435 (2012-2013)**

**2nd Semester**

**Course Instructors:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Phone #** | **Room #** | **E-mail** | **Instructor’s name** |
| 4695218 | 2236 | hbdalla@ksu.edu.sa | Dr. Hassan Abdalla |

**Catalog description:**

Review of Conceptual Database Modeling and Design Techniques, DBMS Concepts, Components and Functions. SQL Data Definition and Manipulation, Transaction Management, Database Security & Administration, Distributed Databases and Data Mining Concepts.

**Prerequisite:**

***None***

**Prerequisite to:**

***None***

**Co- Prerequisite:**

***None***

**Course Objectives:**

* Understanding the fundamental concepts of databases, functions & components of the DBMS, characteristics of file-based systems, etc...
* Getting acquainted with the SQL Data Manipulation and Data Definition techniques.
* Understanding the transaction management: ACID properties, isolation levels, concurrency control, recovery and fault tolerance.
* Understanding database security concepts.
* Understanding Distributed Databases concepts.

* Understanding thedata warehousing and data mining techniques.

**Expected Performance Criteria:**

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| * The students are expected to complete paper reading assignments, project, and pass two written examinations on class material. |

**Schedule:**

* 14 weeks of 3-hours lecture.

**1- Textbooks**

* Fundamentals of Database Systems, by R. Elmasri and Navathe, 6th Edition.
* Database Systems, A Practical Approach to Design , Implementation and Management, by Thomas Connolly and Carolyn Begg, 4th.Edition.
* Database Management Systems, by [Raghu Ramakrishnan](http://www.cs.wisc.edu/~raghu) and [Johannes Gehrke](http://www.cs.cornell.edu/johannes), 3rd Edition.
* Any book related to the course topics

**2- Topics Schedule Plan**

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| --- | --- | --- |
| **Instructor** | **Weeks** | **Topics** |
| Dr. H. Abdalla | W1 | Introduction & Database Environment |
| Dr. H. Abdalla | W2 | Relational Model |
| Dr. H. Abdalla | W3 | Conceptual Database Design - Entity-Relationship Modeling |
| Dr. H. Abdalla | W3 | Enhanced Entity-Relationship Modeling |
| Dr. H. Abdalla | W4 | Normalization |
| Dr. H. Abdalla | W5 | Advanced Normalization |
| Dr. H. Abdalla | W6 | SQL Data Manipulation |
| Dr. H. Abdalla | W7 | SQL Data Definition |
| Dr. H. Abdalla | W8 | Security and Administration |
| Dr. H. Abdalla | W9 | Transaction Management |
| Dr. H. Abdalla | W10 | Transaction Management |
| Dr. H. Abdalla | W11 | Distributed DBMSs - Concepts and Design |
| Dr. H. Abdalla | W13 | Distributed DBMSs - Concepts and Design |
| Dr. H. Abdalla | W14 | Data Mining |

**3- Assessment Methods & Policy:**

Attendance 05*%*

Quiz *10%*

*Paper Project 15% Wednesday 15 May 2013*

Assignment/Project *10 % Wednesday 03 April 2013*

Midterm Exam  *20 % 19 March from 1:00 – 3:00 PM*

Written Final Exam  *40 % 27 May from 1:00 – 3:00 PM*

**Midterm:** One Midterm will be given. It will be a closed book and closed note exam and will cover the studied part of the course.

**Final:** A comprehensive final examination will be given. It will be a closed book and closed note exam and will cover all course material.

**Deadline Policy:** All assignments will be given a strict deadline, and students are required to submit their assignments on or before the deadline. In case of extenuating circumstances, students are advised to contact the professor as soon as practical. You are encouraged to discuss the course and the assignments with each other; however, your exams and assignments should be **your own work**.

**4- Exam dates:**

* Quiz: To be arranged
* Midterm Exam:  *November on Tuesday 19 March from 1:00 – 3:00 PM* Final Exam:  *December on Monday 27 May from 1:00 – 3:00 PM*

**5- Project Requirement**

Part of the course requirement is the development of a project. Students are required to:

* Create a team of 2 students max,
* Choose one of the proposed projects,
* Study the problem,
* Design and implement a solution,
* Prepare a report describing the problem tackled in this project, the proposed solution and the design, and
* Make a presentation as well as a demo of the project.

The instructors of the course will suggest projects during the week number 4.