** King Saud University**

**College of Computer and Information Sciences**

**Department of Information Systems**

**IS 230 – Introduction to Database System (3-0-1)**

**Semester II, Academic Year 2014-2015**

**Section XXXX: Meeting Times: Sunday, Tuesday, Thursday (01:00PM-01:50PM)**

**Section XXXX: Meeting Times: Sunday, Tuesday, Thursday (02:00AM-02:50PM)**

**Current Instructor:** Dr. Ahmed Emam

Department of Information Systems

Room 2027, Extension: 98721

Office Hours: Sunday and Tuesday 10-12, or by appointments

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Website: Faculty.ksu.edu.sa/Emam

**Course Coordinator:** Dr. Ahmed Emam

**Textbook(s) and/or Other Required Materials:**

Primary: Elmasri and Navathe, “Fundamentals of Database Systems”, 6th Edition, Addison-Wesley, ISBN-10:0-136-08620-9, ISBN 13: 978-0-136-08620-8, Published 2011.

Supplementary: Thomas Connolly and Carolyn Begg, Database Systems: A Practical Approach to Design, Implementation, and Management, 6th Edition, Addison-Wesley, ISBN-10: 0132943263 • ISBN-13: 9780132943260, Published 01/08/2014

**Course Description (catalog):**

In this course, students should study the following topics: characteristics and advantages of the database management systems (DBMS), database concepts and architecture; data models, database schemes and instances, DBMS and the concept of program-data independence, database languages and interfaces, database models, relational data model and relational algebra, relational model constraints; domains, keys, and integrity constraints, the structured query language (SQL); data definition, queries, update, statements, and views in SQL, database design; functional dependencies, normal forms.

**Pre-requisite:** IS201or By Instructor Permission

**Co-requisite:** CSC212

**Course Type:** Required

**Course Learning Outcomes (CLOs):**

After completing this course, the students will be able to:

* Understand the basics concepts of database systems
* Able to design Entity-Relationship model
* Use professionally Structured Query Language (SQL)
* Able to design Database Schema
* Understand the basics concepts of Relational Database Normalization
* Familiar with implementation and evaluation a computer-based DB system to meet desired users' needs

**Student Outcomes (SOs) Covered by Course**

|  |  |  |
| --- | --- | --- |
| **Outcome** | **Student Outcome Description** | **Coverage** |
| (B) | 1. An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution | **√** |
| (C) | 1. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs | **√** |
| (G) | 1. An ability to analyze the local and global impact of computing on individuals, organizations, and society | **√** |
| (I) | 1. An ability to use current techniques, skills, and tools necessary for computing practice. | **√** |
| (J) | 1. An understanding of processes that support the delivery and management of information systems within a specific application environment. | **√** |

**Course Learning Outcomes (CLOs) vs. Student Outcomes (SOs)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # | Course Learning Outcomes | Student Outcomes | | | | | | | | | |
| A | B | C | D | E | F | G | H | I | J |
| 1 | Understand the basics and concepts of database systems |  |  |  |  |  |  | x |  |  | x |
| 2 | Able to design Entity-Relationship model |  |  | x |  |  |  |  |  |  |  |
| 3 | Use professionally Structured Query Language (SQL) and understand SQL processing |  | x |  |  |  |  |  |  | x |  |
| 4 | Able to design database schema |  |  | x |  |  |  | x |  |  |  |
| 5 | Understand the basics concepts of Relational Database Normalization |  | x | x |  |  |  | x |  |  |  |
| 6 | Familiar with implementation and evaluation a computer-based DB system to meet desired users' needs |  |  | x |  |  |  |  |  | x | x |

**Major Topics covered and schedule in weeks:**

|  |  |  |
| --- | --- | --- |
| **No** | **Topic** | **# of Weeks** |
| **1** | Introduction to Database and database users | **1** |
| **2** | Database system concepts and architecture | **1** |
| **3** | Data modeling using the Entity-Relationship model | **2** |
| **4** | The relational data model | **1** |
| **5** | SQL (Structured Query Language) | **2** |
| **6** | Relational Algebra | **2** |
| **7** | Advanced SQL (Structured Query Language) | **2** |
| **8** | ER to Relational Mapping | **1** |
| **9** | Functional Dependencies and Relational Database Normalization | **2** |
| **10** | Introduction to DB programming techniques | (self reading) |

**Assessment Plan for the Course:**

|  |  |  |
| --- | --- | --- |
| **No** | **Item** | **Course Weight** |
| **1** | Quizzes | **15%** |
| **2** | Assignments | **05%** |
| **3** | First Mid-Term Exam [Tuesday 10 March , 7th week] | **10%** |
| **4** | Second Mid-Term Exam [Tuesday 21 April, 12th week] | **15%** |
| **5** | Lab Sessions | **05%** |
| **6** | Term Project [Due on Tuesday , 14th week] | **10%** |
| **7** | Final Exam | **40%** |
| **8** | Total | **100%** |

**Reading Assignments:** Reading assignments serve as an aid to the class lecture topics.  They will be assigned in the class and are expected to be completed before the next class.  Announced quizzes will be given on reading assignments.

**Attending Policy:** The class will meet every Saturday, Monday, and Wednesday from 2:00 p.m. till 2:50 p.m. at Building 31 room 22 and every Tuesday from 11:00 a.m. till 11:50 a.m. at Database lab (room A065). Attendance will be recorded during each class meeting. Attendance will be recorded during each class meeting. You will miss a lot and your grade will be affected if you absence more than 3 classes without accepted excuse.

**Cheating Policy:** Students are encouraged to work together and learn from each other.  However, cheating in any form on exams, or copying of homework or computer programs will not be tolerated.  Any evidence of cheating will result in a failing grade for the course. In addition, Moss Software which is an automatic system for determining the similarity of C, C++, Java will be used to detect plagiarism in programming classes.

**General Policy:** Assignments are due at the start of class on the due date. Late assignment will only be accepted in extenuating circumstances. Copying project or assignments results in zero grading and No late project will be accepted. The quizzes may be pop or announced, and may be given at any time during class-time. Finally, all exams are closed book and the final exam will be comprehensive

**Students with Disabilities:**

If you need assistance under ADA, Pleases contact me or call (011)4676605. If you feel you need special accommodations, due to the physical or other situation. Pleases let me know in the first week of the course or make an appointment to discuss it with me as soon as possible.