

**ATTACHMENT 5.**

**Kingdom of Saudi Arabia**  
**The National Commission for Academic Accreditation &**  
**Assessment**

**T6. Course Specifications**  
**(CS)**

**Database I**

**14012301-3**

## Course Specifications

Institution Umm Al Qura University	Date 14/4/2016
College/Department College of Computers and Information Systems	

### A. Course Identification and General Information

1. Course title and code: Database I--14012301-3			
2. Credit hours: 3			
3. Program(s) in which the course is offered. Computer Science			
4. Name of faculty member responsible for the course Shady Elsaid			
5. Level/year at which this course is offered 2nd year / level 5			
6. Pre-requisites for this course (if any) 14011102-4 Object Oriented Programming			
7. Co-requisites for this course (if any)			
8. Location if not on main campus Al-Abidia, Al-Zaher			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100%"/>
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

## B Objectives

### 1. What is the main purpose for this course?

- The student will understand various different types of data modelling techniques and the supporting theoretical foundation.
- Create conceptual database Design for a given application using ER and relational database models.
- Describe characteristics of entity relationship components and explain how relationships between entities are defined.
- Be familiar with fundamental relational database concepts
- Use Relational algebra operators and SQL commands and function for data manipulation.
- Use normalization and normal forms to improve database design.

### 2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

The course includes some lab sessions where students use DBMS like Oracle to implement database and run SQL queries.

## C. Course Description (Note: General description in the form used in Bulletin or handbook)

### Course Description:

This course provides foundational database knowledge and covers topics related to the conceptual design of database based on the functional requirements for organizations. It presents the basics of information storage and management, from the conceptual modelling of an organization's data requirements using the relational model, through to the implementation of these requirements with tools such as SQL and techniques such as normalization.

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
File Systems VS DB Systems	1	3
Data Modelling: Entity Relationship Diagram	2	6
ERD to Relational Mapping	1	3
Normalization: 1NF, 2NF, 3NF, BCNF	2	6
Relational Algebra Operations	2	6
SQL: Data Definition Language	2	6
SQL: Data Manipulation Language	3	9
Disk Storage, Basic File Structures, File Indexing Techniques	1	3

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	28		15			
Credit	2		1			

3. Additional private study/learning hours expected for students per week.	
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

**First**, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
1.1	Explain difference between file systems and database systems	Lecture	Homework/Quizzes/Exams
1.2	Differentiate between ER and Normalization in relational model construction	Lecture	Homework/Quizzes/Exams

<b>2.0</b>	<b>Cognitive Skills</b>		
2.1	Create a Conceptual Data Model	Lecture	Homework/Quizzes/Exams
2.2	Design a Relational Database Model	Lecture	Homework/Quizzes/Exams
<b>3.0</b>	<b>Interpersonal Skills &amp; Responsibility</b>		
<b>4.0</b>	<b>Communication, Information Technology, Numerical</b>		
4.1	Write SQL queries	Lab	Homework/Quizzes/Exams
<b>5.0</b>	<b>Psychomotor</b>		
5.1	Installing database servers	Lab	Homework/Quizzes/Exams

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.)

Course LOs #	Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)											
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	4.1	4.2	5.1
1.1	I											
1.2	P											
2.1			P									
2.2			P									
4.1				P								
5.1											I	I

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Homework or Quiz	5	10%
2	Homework or Quiz	7	10%
3	Midterm	8	30%
4	Homework or Quiz	14	10%
5	Final exam	16	40%

#### D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

6 office hours

#### E Learning Resources

1. List Required Textbooks  
Fundamentals of Database Systems  
By: Ramez Elmasri , Shamkant B. Navathe

2. List Essential References Materials (Journals, Reports, etc.)

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)  
Modern Database Management  
By: Jeffrey A. Hoffer and Ramesh Venkataraman

4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

#### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)

Classrooms, laboratories

2. Computing resources (AV, data show, Smart Board, software, etc.)  
SQL Server (e.g. MS SQL Server, MySQL), data show

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)  
Network , Internet connection

## G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching Questionnaire
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department Questionnaire evaluation with respect to CLOs
3 Processes for Improvement of Teaching Continuous learning to be updated with modern teaching techniques
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)  Remarking of samples of students' work with another staff member with respect to a model answer and marking scheme.
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.  A staff member feedback after midterm and final exams

Name of Instructor: \_\_\_\_\_

Signature: \_\_\_\_\_ Date Report Completed: \_\_\_\_\_

Name of Course Instructor \_\_\_\_\_

Program Coordinator: \_\_\_\_\_

Signature: \_\_\_\_\_ Date Received: \_\_\_\_\_