



COURSE SPECIFICATIONS (CS)

Course Specifications

Institution: Najran University	Date: 27/11/2017
College/Department :	

A. Course Identification and General Information

1. Course title and code: Fundamentals of Database Systems-380CSS-3			
2. Credit hours: 3 (2, 2, 1) (Theory, Lab, Tutorial)			
3. Program(s) in which the course is offered. Computer Science (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course: Soad Mohammed			
5. Level/year at which this course is offered: 7			
6. Pre-requisites for this course (if any): Nil			
7. Co-requisites for this course (if any): Nil			
8. Location if not on main campus: College of Computer Science & Information Systems (Girls), New University Campus			
9. Mode of Instruction (mark all that apply):			
a. traditional classroom	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
b. blended (traditional and online)	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
f. other	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
Comments:			

B Objectives

1. What is the main purpose for this course?

After successful completion of this course students should be able to:

1. Explain the general concepts of database, database system, data, DBMS, database design, database programming languages
2. Design the best E/R diagram data model for a realistic application
3. Construct an Object-Oriented data model for simple application
4. Create a normalized, well-structured relational data model by using database theories such as the conversion from E/R to set of relational tables and functional dependencies, canonical covers, decomposition and normalization techniques
5. Solve simple queries by using the operations (selection, projection, join, Cartesian product) of the theoretical database language Relational Algebra
6. Write statements in SQL data definition language (Create, etc.) and data manipulation language (select, etc.) in order to manage relational database schemas and instances
7. Solve effectively in teams the course project goal within time and resource constraints.
8. Practice communication skills in writing and presenting the course project

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)
 - Question & Answers during lectures to inculcate students' participation towards active learning.
 - Open discussion in lecture.
 - Open Labs are assigned so that the students can avail extra time to solve their lab assignments and exercises.
 - Question & Answers sessions during the lecture hour to inculcate students' participation towards active learning.

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

Course Description:

Study of fundamentals concepts of Databases, architecture of Database Management Systems (DBMS), and database design and database programming language. Topics include: different database design models such as entity relationship and Object-Oriented data model; relational database theories including normalization, functional dependencies and conversion of E/R data model to relational databases; theoretical database programming language such as relational algebra and calculus; Structured Query Language (SQL) including Data Definition Language (DDL) and Data Manipulation Language (DML); advanced SQL covers sub-queries and views, triggers.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to Databases and DBMS	2	4
Structured Query Language Statements(SQL)	1	4
Data Modeling Using Entity Relationship Model (E/R)	2	4
Relational Data Model and Relational Database Constraint	1	5
Relation database design by ER and EE/R- to- Relation mapping	1	5
Functional Dependencies	1	5
Normalization	2	10
The Relational Algebra and Relational Calculus	2	4
Object Oriented Database	1	5
Advanced SQL	1	4
Project	1	4

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planned	30	6	30			66
	Actual	30	8	24			62
Credit	Planned	2	1	1			3
	Actual	2	1	1			3

3. Additional private study/learning hours expected for students per week.

3-4

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
1.0	Knowledge		
1.1	Explain the general concepts of database, database system, data, DBMS, database design, database programming languages	Lectures	QUIZ Midterm Examination Final Examination
1.2			
2.0	Cognitive Skills		
2.1	Design the best E/R diagram data model for a realistic application	Lectures, small group work, small group discussion	Midterm Examination Final Examination, Course project
2.2	Construct an Object-Oriented data model for simple application	Lectures	Midterm Examination Final Examination
2.3	. Create a normalized, well-structured relational data model using theories (normalization, etc.) of relational database	Lectures	Midterm Examination Final Examination
2.4	Solve simple queries by using the operations (selection, projection, join, Cartesian product) of the theoretical database language Relational Algebra	Lectures	Midterm Examination Final Examination

2.5	Write statements in SQL data definition language (Create, etc.) and data manipulation language (select, etc.) in order to manage relational database schemas and instances.	Lectures, debate, small group discussion ,lab demonstrator	Final Examination, Course project, Lab report Lab assessment Final lab test
3.0	Interpersonal Skills & Responsibility		
3.1	Solve effectively in teams the course project goal within time and resource constraints	Small group work, role ,playing	Course project
3.2			
4.0	Communication, Information Technology, Numerical		
4.1	Practice communication skills in writing and presenting the course project Work as a team.	Project	Course project
4.2			
5.0	Psychomotor		
5.1			
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz1	3 rd week	2%
2	Midterm 1	6 th week	15%
3	Project	5 th week	6%
4	Lab assessment	7 th week	10%
5	Quiz2	10 th week	2%
6	Midterm 2	10 th week	15%
7	Final lab exam	14 th week	10%
8	Final Exam	15 th week	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)

- 4 weekly office hours + appointments
- 3 weekly academic advising hours
- Extra weekly 2 office hours prior to exams.

Tutorials are also provided to the students

E Learning Resources

1. List Required Textbooks

FUNDAMENTALS OF DATABASE SYSTEMS, fifth Edition By RamezElmasri and Shamkant B. Navathe

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

RamezElmasri and ShamkantNavathe, "Fundamentals of Database Systems" 6th Edition, 2010.

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

<https://www.w3schools.com/sql/>

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

CDs accompanied with the text book, power point lectures and essential references

Use SQL for Lab

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.)
<p>1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)</p> <p>Furnished with a large central table or multiple small tables that can be grouped into one central table</p> <p>Designed for up to 30 students</p> <p>Size the room allowing 1sq meter per seat</p> <p>White board with markers and erasers</p> <p>Laboratories:</p> <p>25 PC's (one for each students)</p> <ul style="list-style-type: none"> • White board with markers and erasers <p>Lab room with 20 seats.</p>
<p>2. Technology resources (AV, data show, Smart Board, software, etc.)</p> <ul style="list-style-type: none"> • One PC and one projector and data show in the lecture room • 20 PCs in the lab room • ORACLE 10 must be installed in all PCs in the lab. • internet
<p>3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)</p> <ul style="list-style-type: none"> • Printer is important in the lab to print reports and some snapshots. • Projector and PC for the lab instructor is required

G Course Evaluation and Improvement Processes

<p>1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> • Online course survey: By the end of each semester, students give their opinions about many factors in the course. They give feedback about the teaching strategies, assessment methods, textbooks, instructor, etc. • Feedback about Course Learning Outcomes (CLOs): A course survey is distributed to students to take their opinions about the CLOs.
<p>2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ol style="list-style-type: none"> 1. Peer consultation on teaching 2. Departmental council discussions

Discussions within the group of faculty teaching the course

3. Processes for Improvement of Teaching

- Relate CLOs to assessment methods and teaching strategies
- Describe the relationships between the course's topics and CLOs.
- Course syllabus must be distributed in the first week. It should contain the necessary information about the course (CLOs, assessment methods, descriptions, etc.)
- Implement the improvement plan of previous semester.
- Ensure that all students participate in the class.
- Encourage students to attend tutorials and to benefit from office hours.
- Attending workshop, reading books, and the searching for e-resources.

Revision of course contents, course specifications

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)

1. Course coordinator checks all exams and make sure that they are related to CLOs and appropriate for the course.
2. By the end of the semester, the curriculum committee review all courses and approve actions to be taken in the subsequent semester.
3. The vice dean and the dean of the college have to review and approve the final grades.
4. A list of staff members have to check the grades of each one of the students in all exams.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- By the end of each semester, a course file containing all activities and samples must be prepared and submitted to the college.
- Evaluation of CLOs can be used to compare the improvement from previous evaluation.
- Improvement plan based on the online course survey must be prepared.
- Using modern technologies in teaching.
- Updating of the learning resources
- Planning to update course syllabus every two years (the course coordinator are reviewing the courses and the references).
- Curriculum committee updates the syllabus based on the student outcomes

Name of Course Instructor: Soad Mohammed

Signature: _____ Date Specification Completed: 27/11/2017

Program Coordinator: Dr. Abdulrahman Thaqfan Signature: _____

Date Received: _____

