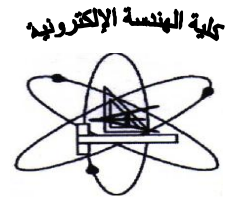


This file has been cleaned of potential threats.

To view the reconstructed contents, please SCROLL DOWN to next page.



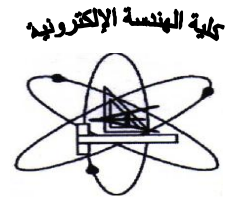
Department offering the program: Electronics and Electrical Communications Engineering
Department offering the course: Electronics and Electrical Communications Engineering

Course Specification

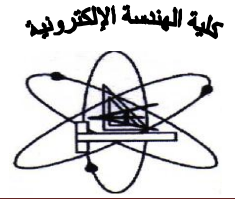
1- Course basic information :		
Course Code: CSE 226	Course Title: Database Systems	Academic year: 2015-2016 Level (2) – Semester (2nd)
Department requirement	Teaching hours: Lecture [2] Tutorial [0] Lab[2]	

2- Objectives of the course	<ol style="list-style-type: none"> 1. To understand general goals of database and information systems. 2. To know the fundamental characteristic of database approach and categories. 3. To learn the modern database architectures. 4. To understand the basis required to design and implement a database system. 5. To know the advantages and disadvantages of some kinds of 6. To Use Database language. 7. To have acquired some practical skills to operate and solve some problems of data base systems using high level languages (SQL and Oracle).
------------------------------------	---

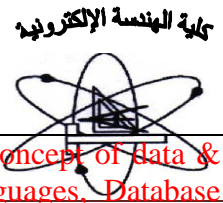
3- Intended Learning Outcomes:		Course ILOs
A- Knowledge and Understanding:	A.1. Explain concepts and theories of mathematics and sciences, appropriate to the database and information systems.	A.1.1. Understand concepts and theories of mathematics appropriate to the Relational Algebra. A.1.2. Learn concepts and theories of sciences appropriate to the database schema.
	A.14. Outline quality assessment of database systems. A.16. State related research and current advances in the field of database and information systems.	A.14.1. Know the parameters that affect the quality of database system. A.16.1. Be familiar with current advances in the field of database environments. A.16.2. Be familiar with State related research and current advances in the field of data management techniques.
	A.17. Outline technologies of database representation and organization on computer storage media.	A.17.1. Know the latest Technologies of database model construction. A.17.2. Keep up to date about the latest Technologies of ER model designing tools. A.17.4. Know the latest technologies of organization on the computer storage media



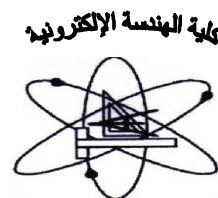
B- Intellectual Skills	<p>B.1. Select appropriate mathematical and computer-based methods for modeling and analyzing database problems.</p> <p>B.2. Select appropriate solutions for database problems based on analytical thinking.</p> <p>B.3. Think in a creative and innovative way in problem solving and design.</p> <p>B.4. Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.</p> <p>B.7. Solve engineering problems, often on the basis of limited and possibly contradicting information.</p>	<p>B.1.1. Select appropriate mathematical methods for modeling and analyzing Rational Algebra problems.</p> <p>B.1.2. Select appropriate computer-based methods for modeling and analyzing real database problems.</p> <p>B.2.1. Select appropriate solutions for real database application problems based on analytical thinking.</p> <p>B.3.1. Think in a creative and innovative ways in database problem solving and design to avoid redundancy and dependability.</p> <p>B.4.1. Combine, exchange, and assess different ideas from a range of sources to build physical database model.</p> <p>B.4.2. Combine, exchange, and assess different views from a range of sources to build logical database model.</p> <p>B.4.3. Combine, exchange, and assess different knowledge from a range of sources to asses existing database applications.</p> <p>B.7.1. Solve Database problems, often on the basis of limited and possibly contradicting information</p>
C- Professional Skills	<p>C.1. Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve database and information systems problems.</p> <p>C.8. Apply safe systems at work and observe the appropriate steps to manage risks.</p> <p>C.9. Demonstrate basic organizational and project management skills.</p> <p>C.10. Apply quality assurance procedures and follow codes and standards.</p>	<p>C.1.1. Apply knowledge of information technology, design, business context and engineering practice integrally to solve database and information systems problems.</p> <p>C.8.1. Apply safe database systems at work.</p> <p>C.8.2. Observe the appropriate steps to manage database security risks.</p> <p>C.9.1. Demonstrate basic organizational and project management skills with the possible aspects related to database system.</p> <p>C.10.1. Apply quality assurance procedures to build professional database systems.</p> <p>C.10.2 Apply database systems by following codes and standards</p>



	<p>C.14. Use appropriate specialized computer software, computational tools and design packages throughout the phases of the life cycle of system development.</p> <p>C.15. Write computer programs on professional levels achieving acceptable quality measures in software development.</p>	<p>C.14.1. Use appropriate specialized computer software throughout the phases of the life cycle of database system development</p> <p>C.14.2. Use appropriate design packages throughout the phases of the life cycle of system development</p> <p>C.15.1. Write computer programs that access database system on professional levels achieving acceptable quality measures in software development.</p>
D- General Skills	<p>D.2. Work in stressful environment and within constraints.</p> <p>D.6. Effectively manage resources.</p> <p>D.8. Acquire entrepreneurial skills.</p>	<p>D.2.1. Work in stressful environment to build database system in a proper time.</p> <p>D.2.2. Work within constraints to mutate real world conditions.</p> <p>D.6.1. Effectively manage resources to enhance the speed of database system.</p> <p>D.8.1. Acquire entrepreneurial skills in data acquisition step.</p>



<p>4-Course Contents</p>	<p>Importance of information bases in organizations- Concept of Data & Overview of DBMS, Data Models, Database Languages, Database Administrator, Database Users, Three Schema architecture of DBMS.- Entity-Relationship Model ,Basic concepts, Design Issues, Mapping Constraints, Keys, Entity-Relationship Diagram, Weak Entity Sets, Extended, E-R features.- Relational Model ,Structure of relational - Databases, Relational Algebra and calculus- SQL queries and Integrity Constraints.</p> <p>Database Lab:</p> <ol style="list-style-type: none"> 1. Review of SQL basics 2. Nested Query 3. Views 4. Basic Programming of PL/SQL 5. Declaration of composite data 												
<p>5- Teaching and Learning Methods</p>	<p>Lectures Experiments in the laboratory Exercises and tutorials Research assignments Work a project</p>												
<p>6- Teaching and Learning Methods for disable students</p>	<ul style="list-style-type: none"> - Arrange meetings for more discussion and declaration. - Repeat the explanation based on their request. - Assign a portion of the office hours for those students. - Give them specific tasks. 												
<p>7- Student Assessment</p>													
<p>a- Assessment Methods</p>	<ul style="list-style-type: none"> - Reports, assignments, exercises, and final written exam to assess knowledge and understanding - Regular oral and written quizzes to assess intellectual skills. - Project for design and implement database modeling. 												
<p>b- Assessment Schedule</p>	<table border="0"> <tr> <td>- Exercise sheet/ Lab assignment :</td> <td>Weekly</td> </tr> <tr> <td>- Quizz-1:</td> <td>Week <u>no</u> 5</td> </tr> <tr> <td>- Mid-Term exam:</td> <td>Week <u>no</u> 8</td> </tr> <tr> <td>- Quizz.2:</td> <td>Week <u>no</u> 11</td> </tr> <tr> <td>- Lab exam:</td> <td>Week <u>no</u> 15</td> </tr> <tr> <td>- Final – term examination:</td> <td>Week <u>no</u> 16</td> </tr> </table>	- Exercise sheet/ Lab assignment :	Weekly	- Quizz-1:	Week <u>no</u> 5	- Mid-Term exam:	Week <u>no</u> 8	- Quizz.2:	Week <u>no</u> 11	- Lab exam:	Week <u>no</u> 15	- Final – term examination:	Week <u>no</u> 16
- Exercise sheet/ Lab assignment :	Weekly												
- Quizz-1:	Week <u>no</u> 5												
- Mid-Term exam:	Week <u>no</u> 8												
- Quizz.2:	Week <u>no</u> 11												
- Lab exam:	Week <u>no</u> 15												
- Final – term examination:	Week <u>no</u> 16												
<p>c- Weighting of Assessment</p>	<table border="0"> <tr> <td>- Other assignment and Class work :</td> <td>5 %</td> </tr> <tr> <td>- Mid-term examination:</td> <td>15 %</td> </tr> <tr> <td>- Oral and practical exam:</td> <td>20 %</td> </tr> <tr> <td>- Final – term examination:</td> <td>60 %</td> </tr> <tr> <td style="text-align: right;">Total</td> <td>100 %</td> </tr> </table>	- Other assignment and Class work :	5 %	- Mid-term examination:	15 %	- Oral and practical exam:	20 %	- Final – term examination:	60 %	Total	100 %		
- Other assignment and Class work :	5 %												
- Mid-term examination:	15 %												
- Oral and practical exam:	20 %												
- Final – term examination:	60 %												
Total	100 %												
<p>8- List of text books and references:</p>													
<p>a- Course notes</p>	<p>There are lectures notes prepared in the form of a book authorized by the department.</p>												
<p>b- Text books</p>	<p>[1] Abraham Silberschatz, Henry Korth, S. Sudarshan, “Database System Concepts”, Sixth edition, McGraw-Hill Science/Engineering/Math, 2010</p>												
<p>c- Recommended books</p>	<p>[1] Elmasry, Navathe, “Fundamentals of Database Systems” fourth edition, person education, 2003. [2] Ramakrishnan.Gehrke, “Database Management System”, Third edition, McCRAW.HILL, 2003. [3] Tomas Connolly, Carolyn BEGG, "Database System" fourth edition, person education 2005.</p>												
<p>d- Periodicals, Web sites ...etc</p>	<p>[1] Stanford Introduction to Databases course at Coursera https://www.coursera.org/course/db [2] MIT Database Systems course at MIT open courseware http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6.830-database-systems-fall.2010/</p>												



Course contents - ILOs Matrix

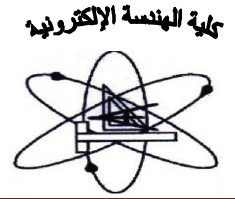
Content Topics	Week	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Demonstrate an understanding of the role and importance of information bases in organizations - Principles and objectives of data management.	1, 2	A.1, A.14, A.17	B.1, B.2	C.1	
Concepts of Database systems.	3, 4	A.16	B.1, B.2	C.1	
Conceptual design using ER model.	5, 6	A.1, A.14, A.17	B.1, B.2, B.3	C.9, C.10	D.2, D.6, D.8
Relational Database, Relational constraints, and Relational Algebra.	7, 9,10	A.1, A.14	B.1, B.2, B.3	C.9, C.10	D.2, D.6, D.8
Standard Database Language - ER – to- Relational database mapping.	11, 12	A.1, A.14	B.2, B.3, B.4, B.7	C.1, C.8, C.9, C.10, C.14, C.15	D.2, D.6, D.8
SQL.	13, 14,15	A.14, A.16	B.2, B.3	C.8, C.9, C.10, C.14, C.15	D.2, D.8

Teaching and Learning Methods - ILOs Matrix

Teaching and Learning Methods	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Lectures	A.1, A.14, A.16	B.1, B.2, B.3, B.4, B.7		D.2, D.6, D.8
Tutorials	A.1, A.16, A.17	B.1, B.2, B.3, B.4, B.7		
Exercises		B.1, B.2, B.3, B.4, B.7		D.2, D.6, D.8
Labs and/or case studies		B.7	C.1, C.8, C.9, C.10, C.14, C.15	D.6, D.8
Reports and assignments	A.14	B.7	C.1, C.8, C.14, C.15	D.8

Assessment Methods - ILOs Matrix

Assessment Methods	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Weekly sheet exercises		B.1, B.2, B.3, B.4, B.7		D.2, D.6, D.8



Reports	A.1,A.16,A.17		C.1,C.8,C.9,C.10,C.14,C.15	D.6,D.8
Quizzes	A.1,A.16,A.17	B.1,B.2,B.3,B.4,B.7		
Laboratory exam			C.1,C.8,C.9,C.10,C.14,C.15	
Midterm, and Final Written exams	A.1,A.14,A.16,A.17	B.1,B.2,B.3,B.4,B.7		

Authorized from department board at 15/05/2016

Authorized from college board at 05/06/2016

Course coordinator:
Dr. Mohamed Badway

Head of Department:
Prof. Fathi El-Sayed Abd El-Samie

Date: / /