

Republic of Yemen

Ministry of Higher Education & Scientific Research
Council of Academic Accreditation & Quality

Assurance of Higher Education (CAQA)



21 September University for medical and Applied Science



Faculty of Engineering and Computer
Department of Information Technology
Program of Information Technology

Course Specification of
Database Systems

Course Code. (07.01.705)

2024



T4: This Template is Developed and Approved by CAQA-Yemen, 2023

Prepared by:

Assoc. Prof. Farouk Al-Fahaidy

Reviewed by:

Dr. ----

Head of the Department:

Dr. Awadh Al-Kubati

Quality Unit:

Dr. Mohammed Al-Shamahi

I. General Information:						
1.	Course Title:	Database Systems				
2.	Course Code:	07.1.705				
3.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial/ Seminar	Lab	Clinical
		3	2	--	2	--
4.	Level/ Semester at which this Course is offered:	2nd Level / 1st Semester				
5.	Pre –Requisite (if any):	Introduction to Information Technology (07.01.701)				
6.	Co –Requisite (if any):	-----				
7.	Program (s) in which the Course is Offered:	Bachelor of Medical Information Technology				
8.	Language of Teaching the Course:	Mixed (English + Arabic)				
9.	Location of Teaching the Course:	Faculty of Medical Technology				
10.	Prepared by:	Assoc. Prof. Farouk Al-Fahaidy				
11.	Date and Number of Approval by Council:					

II. Course Description:

This introductory course aims to offering students with the essentials theories and concepts related to the management of database systems. Database systems have been applicable in several environmental applications, like biomedical, society, IT and marketing. Course topics covers an introduction to database systems, the Structural Query Language (SQL), the methods of database systems design, and advanced database design concepts. Throughout active-lectures, practical lab sessions and course-projects, students will gain skills related to practices in database system design and implementation for different environments and applications.

III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to:		Referenced PILOs	
A. Knowledge and Understanding:		I, P or M/A	
a1	Explain the database design theories and methodologies along with the procedural stages of the database system development life-cycle.	I	A1 Demonstrate an understanding of appropriate models, theories, mathematical foundations, and techniques related to Health Information Technology discipline.
a2	Know special needs and constraints related to the database-based solutions for different context including healthcare.	I	A2 + A4 Identify user and Healthcare needs to provide IT based solutions to real-world problem. A4. Demonstrate a sound understanding the computing concept related to analysis, design, implementation, and evaluation of Health information system.
B. Intellectual Skills:			
b1	Suggest an appropriate database-based solution by considering a given set of Health requirements in the context of Health Information	M/A	B1 +B 4 Critically analyse complex computing problems and propose appropriate information technology based

	Technology discipline.			solutions and integrate them effectively into the uses and organization Health. B4. Evaluate IT based solution to meet a given set of Health requirements in the context of Health Information Technology discipline.
b2	Investigate well-defined user requirements for the simplification of the database design process, by signifying attributes using database normalization technique.	M/A	B2	Analyze the impacts of computing on Health objectives and customer needs, and consider them during the analytical processing, selection, integration, configuration and administration of information systems
C. Professional and Practical Skills:				
c1	Apply fundamental theories, concepts, principles and integrity constraints using SQL in the progress of a complete database system for the desired healthcare application.	P	C1	Employ effectively the concepts, principles of computational tools, techniques used for the construction and documentation of Health Information of varying complexity.
c2	Use contemporary development software/environments for the design, development and implementation of database-based applications.	P	C4	Use current techniques, skills, and tools necessary for computing practices.
D. Transferable Skills:				
d1	Function effectively as an individual, as a member, or a leader of a team throughout lab sessions and term project works, presentation and defend.	M/A	D1	Function effectively as an individual, as a member, or leader of a team engaged in activities appropriate to the Health Information Technology discipline to accomplish a common goal.

d2			D2	Commit to professional ethics, responsibilities, and norms of professional IT practices.
d3			D3	Communicate effectively in writing and orally in a variety of professional contexts.
d4			D4	Engage in continuing professional development and lifelong learning as an IT professional.
I= Introduced, P=Practiced or M/A= Mastered/Advanced				

(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:			
	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
a1	Explain the database design theories and methodologies along with the procedural stages of the database system development life-cycle.	<ul style="list-style-type: none"> ▪ Active Lectures, ▪ Interactive class discussions, ▪ Exercises and Home Works. 	<ul style="list-style-type: none"> ▪ Written exams, ▪ Assignment work, ▪ Quizzes, ▪ reports submission.
a2	Know special needs and constraints related to the database-based solutions for different context including healthcare.		
(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:			
	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
b1	Suggest an appropriate database-based solution by considering a given set of Health requirements in the context of Health Information Technology discipline.	<ul style="list-style-type: none"> ▪ Active Lectures, ▪ Interactive Class Discussions, ▪ Laboratory based session, ▪ Problem-solving, ▪ Exercises and Home Works, ▪ Group work, ▪ Presentation. 	<ul style="list-style-type: none"> ▪ Written exams, ▪ Practical exam, ▪ Project, ▪ Assignment, ▪ Case studies, ▪ Assignment

b2	Investigate well-defined user requirements for the simplification of the database design process, by signifying attributes using database normalization technique.		work.
(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:			
	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
c1	Apply fundamental theories, concepts, principles and integrity constraints using SQL in the progress of a complete database system for the desired healthcare application.	<ul style="list-style-type: none"> ▪ Active Lectures, ▪ Interactive Class Discussions, ▪ Laboratory based session, ▪ Exercises and Home Works, ▪ Project, ▪ Group work. 	<ul style="list-style-type: none"> ▪ Written exams, ▪ Quizzes, ▪ Practical exam, ▪ Assignment, ▪ Report submission.
c2	Use contemporary development software/environments for the design, development and implementation of database-based applications.		
(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:			
	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
d1	Function effectively as an individual, as a member or as a leader of a team throughout lab sessions and term project works, assignment work, report writing, presentation and defend.	<ul style="list-style-type: none"> ▪ Group work, ▪ Directed Self-study, ▪ Interactive class discussions, ▪ Exercises and Home Works, ▪ Seminar/ project/presentation, ▪ Laboratory based session, ▪ Project. 	<ul style="list-style-type: none"> ▪ Project presentation, ▪ Laboratory exam, ▪ Assignment, ▪ Report/Project

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Introduction to Database Systems	<ul style="list-style-type: none"> Course Orientations & Introduction, Traditional File-based systems Database approach Architecture for database systems Roles in database environment History of DBMS Advantages and disadvantages of DBMS 	1	2	a1
2	Database Environment	<ul style="list-style-type: none"> Three level ANSI-SPARC architecture Database languages Database model and conceptual modeling. Function of a DBMS Components of DBMS Multi-user DBMS architectures 	1	2	a1, a2
3	Relational Data Model	<ul style="list-style-type: none"> Relational model and terminology Relational keys and integrity constraints Relational Algebra Relational Calculus. 	2	4	a1, a2
4	Structural Query Language (SQL)	<ul style="list-style-type: none"> SQL Definition, Working with standard SQL for manipulation of Database, SQL Query statements: variations of Select Statement, Joint, Aggregation functions, Sub Queries, Views, ... etc. SQL for database administration: Create, Alter, delete, etc. SQL Statements for Integrity, Constraints and Privileges. 	3	6	a1, a2, b1, b2, c1
5	Midterm Theoretical Exam	<ul style="list-style-type: none"> All Previous Topics 	1	2	a1, a2, b1, b2, c1
6	Database Planning, Design and	<ul style="list-style-type: none"> Database system development lifecycle Database planning and system definition 	1	2	a1, a2, b2,

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	Administration	<ul style="list-style-type: none"> Requirements collection and analysis Database design phases DBMS selection 			
7	Entity-Relationship (ER) Data Model	<ul style="list-style-type: none"> Entity and Relationship types Strong and weak entity types Attributes on relationships Structural constraints. Hashing techniques Database Procedural Design Steps using ER diagram, Problems with ER models. Database Procedural Design Steps using Enhanced ER Model, Illustration Examples. 	2	4	a1, a2, b1, b2, c1
8	Relational Database Design with Normalization	<ul style="list-style-type: none"> Normalization purpose and advantages Data redundancy and update Anomalies Functional dependencies Normalization Forms: 1NF, 2NF, AND 3NF Database design theory and methodology, Illustration Example. 	2	4	a1, a2, b1, b2, c1
9	Advanced Topics in Database Systems	<ul style="list-style-type: none"> Recovery Concurrency Security Object oriented database Advanced database design concepts Advanced applications in database 	2	4	a1, a2, b1, b2, c1
10	Final Theoretical Exam	<ul style="list-style-type: none"> ALL Topics, except the last one. 	1	2	a1, a2, b1, b2, c1
Number of Weeks /and Units Per Semester			16	32	

B. Practical Aspect (Lab/Clinical) (if any):

No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
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No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Lab Orientation, <ul style="list-style-type: none"> - Software Preparing & Installation of working Environments (modern/Suitable) for Database Design & Querying (SQL) and Developments (Oracle or any current/contemporary Environment). - Directions on Project work and students' distributions. 	1	2	c2, d1
2	Database Terminologies: <ul style="list-style-type: none"> - Relations (Tables), Keys. - Introduction to Access, - Types of records in Access, - Forms and Query 	1	2	a1, c2, d1
3	SQL Working Environment: <ul style="list-style-type: none"> - Introduction to SQL - Working with the used SQL Environment, - Creating different types of database accessing users. 	1	2	c2, d1
4	Working in Database design & Implementation: <ul style="list-style-type: none"> - Create tables, - Adding Constraints on tables, - Data changing, - Select statement, - Order Data, - Joint, - Aggregation functions, - Views. 	3	6	b2, c1, c2, d1
5	Working in Database management: <ul style="list-style-type: none"> - SQL integrity Statements, 	1	2	b1, b2, c1, c2, d1

No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	- Grant & Restrict Permissions, ...etc.			
6	Illustration Examples: - Design and Implementation of a Database System with different relations & associations. - Apply Integrity & Privileges Constraints - Practice Queries, Sub-Queries to the designed Database, - Practice/Implement View Queries	2	4	b1, b2, c1, c2, d1
7	- Working with PL/SQL Triggers & Functions	2	4	b1, b2, c1, c2, d1
8	Introduction to Oracle/Currently developer, forms and reports: - Implement some Application with Forms & Reports implementation using Oracle or any other contemporary environment.	2	4	b1, b2, c1, c2, d1
9	- Project Presentation, Discussions & Evaluation.	1	2	a1, a2, b1, b2, c1, c2, d1
10	- Final Lab Exam	1	2	b1, b2, c1, c2, d1
Number of Weeks /and Units Per Semester		15	30	

C. Tutorial Aspect (if any):

No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1				
2				
3				
4				

No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
Number of Weeks /and Units Per Semester				

الجدول التالي يصف التكاليف والواجبات المتوقع من الطلاب إكمالها كجزء من المقرر. يجب مراعاة ما يلي:
1- تحدد التكاليف والأنشطة وتوضع الدرجة المستحقة لكل تكليف أو نشاط على أن تتسق مع توزيع الدرجات الواردة في الفقرات التالية.

VII. Reports & Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	Assignment 1: Assignment: Relational Database, Database Design and Planning and Database Design using ER diagram Laboratory report: on SQL Select Statement with all of its different variances.	3 rd to 9 th	5	a1, a2, b1, b2, c1, d1
2	Assignment 2 & Reports: Database Design using Normalization, Database	10 th to 13 th	5	a1, a2, b1, b2, c1, d1

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
	Integrity, Database Recovery and Concurrency.			
3	Assignment 3 (Laboratory report): on Modern Tools/techniques/Environments relating to database systems design & implementation.	14 th	5	b1, b2, c1, c2, d1
Total			15	

VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Assignments & Reports	3 rd to 14 th	15	10%	a1, a2, b1, b2, c1, c2, d1
2	Quizzes 1 & 2	6 th & 12 th	10	6.667%	b1, b2, c1, c2
3	Mid-Term Theoretical Exam	8 th	20	13.33%	a1, a2, b1, b2, c1
5	Final Practical Exam including Project Presentation & Evaluation	14 th & 15 th	30	20%	a1, a2, b1, b2, c1, c2, d1
6	Final Theoretical Exam	16 th	75	50%	a1, a2, b1, b2, c1
Total			150	100%	

IX. Learning Resources:

- *Written in the following order:* Author, Year of publication, Title, Edition, Place of publication, Publisher.

1- Required Textbook(s) (maximum two):

- 1- RamezElmasri and Shamkant B. Navathe (2015), "Fundamentals of Database Systems", Seventh Edition, Pearson.

2- C.J. Date (2003), "An Introduction to Database Systems", Eighth Edition, Pearson.

2- Essential References:

- 1- SikhaSahaBaguiandRichard Walsh Earp (2011), "Database Design Using Entity-Relationship Diagrams", Second Edition, Auerbach Publications.
- 2- Thomas M. Connolly and Carolyn E. Begg (2009), "Database Systems: A Practical Approach to Design, Implementation and Management", Fifth Edition, Pearson.

3- Electronic Materials and Web Sites etc.:

Websites:

1-

2-

Journals:

1-

2-

Other Web Sources:

1. MIT Courses: <http://www.mit/courses>
2. Lecture notes provided by the lecturer

X. Course Policies: (Based on the Uniform Students' By law (2007))

1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.

6	<p>Forgery and Impersonation:</p> <p>Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.</p>
7	<p>Other policies:</p> <p>The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.</p>

Faculty of Medical Technology

Department of Medical Information Technology

Program of Medical Information Technology

Course Plan (Syllabus) of Database System

Course Code. 07.01.705

I. Information about Faculty Member Responsible for the Course:							
Name of Faculty Member:	Farouk Al-Fahaidy	Office Hours					
Location & Telephone No.:	777909815						
E-mail:	farouqakh@gmail.com	SAT	SUN	MON	TUE	WED	THU

2025/2024

II. Course Identification and General Information:

	Course Title:	Database Systems			
	Course Code:	07.1.705			
	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours
			Lecture	Tutorial/ Seminar	Lab
		3	2	--	2
	Level/ Semester at which this Course is offered:	2nd Level / 1st Semester			
	Pre –Requisite (if any):	Introduction to Information Technology (07.01.701)			
	Co –Requisite (if any):	-----			
	Program (s) in which the Course is Offered:	Bachelor of Medical Information Technology			
	Language of Teaching the Course:	Mixed (English + Arabic)			
	Location of Teaching the Course:	Faculty of Medical Technology			
	Prepared by:	Assoc. Prof. Farouk Al-Fahaidy			
11	Date and Number of Approval by Council:				

III. Course Description:

This introductory course aims to offering students with the essentials theories and concepts related to the management of database systems. Database systems have been applicable in several environmental applications, like biomedical, society, IT and

marketing. Course topics covers an introduction to database systems, the Structural Query Language (SQL), the methods of database systems design, and advanced database design concepts. Throughout active-lectures, practical lab sessions and course-projects, students will gain skills related to practices in database system design and implementation for different environments and applications.

IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

	A. Knowledge and Understanding:
a1	Explain the database design theories and methodologies along with the procedural stages of the database system development life-cycle.
a2	Know special needs and constraints related to the database-based solutions for different context including healthcare.
	B. Intellectual Skills:
b1	Suggest an appropriate database-based solution by considering a given set of Health requirements in the context of Health Information Technology discipline.
b2	Investigate well-defined user requirements for the simplification of the database design process, by signifying attributes using database normalization technique.
	C. Professional and Practical Skills:
c1	Apply fundamental theories, concepts, principles and integrity constraints using SQL in the progress of a complete database system for the desired healthcare application.
c2	Use contemporary development software/environments for the design, development and implementation of database-based applications.
	D. Transferable Skills:
d1	Function effectively as an individual, as a member, or a leader of a team throughout lab sessions and term project works, presentation and defend.
d2	
d3	
d4	

I= Introduced, P=Practiced or M/A= Mastered/Advanced

V. Course Contents:

A. Theoretical Aspect:				
No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to Database Systems	<ul style="list-style-type: none"> - Course Orientations & Introduction, - Traditional File-based systems - Database approach - Architecture for database systems - Roles in database environment - History of DBMS - Advantages and disadvantages of DBMS 	1	2
2	Database Environment	<ul style="list-style-type: none"> - Three level ANSI-SPARC architecture - Database languages - Database model and conceptual modeling. - Function of a DBMS - Components of DBMS - Multi-user DBMS architectures 	1	2
3	Relational Data Model	<ul style="list-style-type: none"> - Relational model and terminology - Relational keys and integrity constraints - Relational Algebra - Relational Calculus. 	2	4
4	Structural Query Language (SQL)	<ul style="list-style-type: none"> - SQL Definition, - Working with standard SQL for manipulation of Database, - SQL Query statements: variations of Select Statement, Joint, Aggregation functions, Sub Queries, Views, ... etc. - SQL for database administration: Create, Alter, delete, etc. - SQL Statements for Integrity, Constraints and Privileges. 	3	6
5	Midterm Theoretical Exam	<ul style="list-style-type: none"> - All Previous Topics 	1	2
6	Database Planning, Design and Administration	<ul style="list-style-type: none"> - Database system development lifecycle - Database planning and system definition - Requirements collection and analysis - Database design phases DBMS selection 	1	2
7	Entity-Relationship	<ul style="list-style-type: none"> - Entity and Relationship types - Strong and weak entity types 	2	4

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
	(ER) Data Model	<ul style="list-style-type: none"> - Attributes on relationships - Structural constraints. - Hashing techniques - Database Procedural Design Steps using ER diagram, - Problems with ER models. - Database Procedural Design Steps using Enhanced ER Model, - Illustration Examples. 		
8	Relational Database Design with Normalization	<ul style="list-style-type: none"> - Normalization purpose and advantages - Data redundancy and update - Anomalies - Functional dependencies - Normalization Forms: 1NF, 2NF, AND 3NF - Database design theory and methodology, - Illustration Example. 	2	4
9	Advanced Topics in Database Systems	<ul style="list-style-type: none"> - Recovery - Concurrency - Security - Object oriented database - Advanced database design concepts - Advanced applications in database 	2	4
10	Final Theoretical Exam	<ul style="list-style-type: none"> - ALL Topics, except the last one. 	1	2
Number of Weeks /and Units Per Semester			16	32

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to Database Systems	<ul style="list-style-type: none"> - Course Orientations & Introduction, - Traditional File-based systems - Database approach - Architecture for database systems - Roles in database environment - History of DBMS - Advantages and disadvantages of DBMS 	1	2
2	Database Environment	<ul style="list-style-type: none"> - Three level ANSI-SPARC architecture - Database languages - Database model and conceptual modeling. 	1	2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		<ul style="list-style-type: none"> - Function of a DBMS - Components of DBMS - Multi-user DBMS architectures 		
3	Relational Data Model	<ul style="list-style-type: none"> - Relational model and terminology - Relational keys and integrity constraints - Relational Algebra - Relational Calculus. 	2	4
4	Structural Query Language (SQL)	<ul style="list-style-type: none"> - SQL Definition, - Working with standard SQL for manipulation of Database, - SQL Query statements: variations of Select Statement, Joint, Aggregation functions, Sub Queries, Views, ... etc. - SQL for database administration: Create, Alter, delete, etc. - SQL Statements for Integrity, Constraints and Privileges. 	3	6
5	Midterm Theoretical Exam	<ul style="list-style-type: none"> - All Previous Topics 	1	2
6	Database Planning, Design and Administration	<ul style="list-style-type: none"> - Database system development lifecycle - Database planning and system definition - Requirements collection and analysis - Database design phases - DBMS selection 	1	2
7	Entity-Relationship (ER) Data Model	<ul style="list-style-type: none"> - Entity and Relationship types - Strong and weak entity types - Attributes on relationships - Structural constraints. - Hashing techniques - Database Procedural Design Steps using ER diagram, - Problems with ER models. - Database Procedural Design Steps using Enhanced ER Model, - Illustration Examples. 	2	4
8	Relational Database Design with Normalization	<ul style="list-style-type: none"> - Normalization purpose and advantages - Data redundancy and update - Anomalies - Functional dependencies - Normalization Forms: 1NF, 2NF, AND 3NF - Database design theory and 	2	4

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		methodology, – Illustration Example.		
9	Advanced Topics in Database Systems	– Recovery – Concurrency – Security – Object oriented database – Advanced database design concepts – Advanced applications in database	2	4
10	Final Theoretical Exam	– ALL Topics, except the last one.	1	2
Number of Weeks /and Units Per Semester			16	32

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	Lab Orientation, - Software Preparing & Installation of working Environments (modern/Suitable) for Database Design & Querying (SQL) and Developments (Oracle or any current/contemporary Environment). Directions on Project work and students' distributions.	1	2
2	Database Terminologies: - Relations (Tables), Keys. - Introduction to Access, - Types of records in Access, Forms and Query	1	2
3	SQL Working Environment: - Introduction to SQL - Working with the used SQL Environment, Creating different types of database accessing users.	1	2
4	Working in Database design & Implementation:	3	6

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
	<ul style="list-style-type: none"> - Create tables, - Adding Constraints on tables, - Data changing, - Select statement, - Order Data, - Joint, - Aggregation functions, Views.		
5	Working in Database management: <ul style="list-style-type: none"> - SQL integrity Statements, Grant & Restrict Permissions, ...etc.	1	2
6	Illustration Examples: <ul style="list-style-type: none"> - Design and Implementation of a Database System with different relations & associations. - Apply Integrity & Privileges Constraints - Practice Queries, Sub-Queries to the designed Database, Practice/Implement View Queries	2	4
7	Working with PL/SQL Triggers & Functions	2	4
8	Introduction to Oracle/Currently developer, forms and reports: Implement some Application with Forms & Reports implementation using Oracle or any other contemporary environment.	2	4
9	Project Presentation, Discussions & Evaluation.	1	2
10	Final Lab Exam	1	2
Number of Weeks /and Units Per Semester		15	30
No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	Lab Orientation, <ul style="list-style-type: none"> - Software Preparing & Installation of working 	1	2

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
	Environments (modern/Suitable) for Database Design & Querying (SQL) and Developments (Oracle or any current/contemporary Environment). - Directions on Project work and students' distributions.		
2	Database Terminologies: - Relations (Tables), Keys. - Introduction to Access, - Types of records in Access, - Forms and Query	1	2
3	SQL Working Environment: - Introduction to SQL - Working with the used SQL Environment, - Creating different types of database accessing users.	1	2
4	Working in Database design & Implementation: - Create tables, - Adding Constraints on tables, - Data changing, - Select statement, - Order Data, - Joint, - Aggregation functions, - Views.	3	6
5	Working in Database management: - SQL integrity Statements, - Grant & Restrict Permissions, ...etc.	1	2
6	Illustration Examples:	2	4

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
	<ul style="list-style-type: none"> - Design and Implementation of a Database System with different relations & associations. - Apply Integrity & Privileges Constraints - Practice Queries, Sub-Queries to the designed Database, - Practice/Implement View Queries 		
7	- Working with PL/SQL Triggers & Functions	2	4
8	<p>Introduction to Oracle/Currently developer, forms and reports:</p> <ul style="list-style-type: none"> - Implement some Application with Forms & Reports implementation using Oracle or any other contemporary environment. 	2	4
9	- Project Presentation, Discussions & Evaluation.	1	2
10	- Final Lab Exam	1	2
Number of Weeks /and Units Per Semester		15	30

C. Tutorial Aspect:

No.	Tutorial	Number of Weeks	Contact Hours
1			
2			
3			
4			
5			
6			
7			
8			

No.	Tutorial	Number of Weeks	Contact Hours
Number of Weeks /and Units Per Semester			

VI. Teaching Strategies of the Course:

خطأ! لم يتم العثور على مصدر المرجع

VII. Assessment Methods of the Course:

خطأ! لم يتم العثور على مصدر المرجع

VIII. Reports & Assignments:

No.	Assignments	Week Due	Mark
1	Assignment 1: Assignment: Relational Database, Database Design and Planning and Database Design using ER diagram Laboratory report: on SQL Select Statement with all of its different variances.	3rd to 9th	5
2	Assignment 2 & Reports: Database Design using Normalization, Database Integrity, Database Recovery and Concurrency.	10th to 13th	5
3	Assignment 3 (Laboratory report): on Modern Tools/techniques/Environments relating to database systems design & implementation.	14th	5
Total			15

IX. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Assignments & Reports	3rd to 14th	15	10%
2	Quizzes 1 & 2	6th & 12th	10	6.667%
3	Mid-Term Theoretical Exam	8th	20	13.33%

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
5	Final Practical Exam including Project Presentation & Evaluation	14th & 15th	30	20%
6	Final Theoretical Exam	16th	75	50%
Total			150	100%

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Assignments & Reports	3 rd to 14 th	15	10%
2	Quizzes 1 & 2	6 th & 12 th	10	6.667%
3	Mid-Term Theoretical Exam	8 th	20	13.33%
5	Final Practical Exam including Project Presentation & Evaluation	14 th & 15 th	30	20%
6	Final Theoretical Exam	16 th	75	50%
Total			150	100%

X. Learning Resources:

- *Written in the following order: Author, Year of publication, Title, Edition, Place of publication, Publisher.*

1- Required Textbook(s) (maximum two):

RamezElmasri and Shamkant B. Navathe (2015), "Fundamentals of Database Systems", Seventh Edition, Pearson.

C.J. Date (2003), "An Introduction to Database Systems", Eighth Edition, Pearson.

2- Essential References:

SikhaSahaBaguiandRichard Walsh Earp (2011), "Database Design Using Entity-Relationship Diagrams", SecondEdition, Auerbach Publications.

Thomas M. Connolly and Carolyn E. Begg (2009), "Database Systems: A Practical Approach to Design, Implementation and Management", Fifth Edition, Pearson.

3- Electronic Materials and Web Sites etc.:

Websites:

1-

- 2-
- 3- Journals:
- 4-
- 5-
- 6- Other Web Sources:
- 7- MIT Courses: <http://www.mit/courses>
- 8- Lecture notes provided by the lecturer

XI. Course Policies: (Based on the Uniform Students' Bylaw (2007))

1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.