Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	**Koya Technical Institute**	
Department	**Information Technology**	
Module Name	**Database Concepts**	
Module Code	**DAC304**	
Degree	**Technical Diploma** ☐ **Bachelor** ☐ **High Diploma** ☐ **Master** x **PhD** ☐	
Semester	**3rd**	
Qualification	**MSc.**	
Scientific Title	**Assistant Lecturer**	
ECTS (Credits)	**6**	
Module type	**Prerequisite** ☐ **Core** x **Assist.** ☐	
Weekly hours		
Weekly hours (Theory)	**(2)hr Class**	**( )Total hrs Workload**
Weekly hours (Practical)	**(2)hr Class**	**( )Total hrs Workload**
Number of Weeks	**12**	
Lecturer (Theory)	**Rebwar Khalid Hamad**	
E-Mail & Mobile NO.	**rebwar.khalid@epu.edu.iq** **07501524517**	
Lecturer (Practical)	**Parwar Salam , Dunya Widad**	
E-Mail & Mobile NO.		
Websites		

Course Book

Course Description	This course offers lecture, laboratory, and online interaction to provide a foundation in data management concepts and database systems. It includes representing information with the relational database model, manipulating data with an interactive query language (SQL) and database programming, database development including internet applications, and database security, integrity and privacy issues.
Course objectives	This course gives students opportunity fundaments concepts of data modeling. Design and applications development are explained in simple language which is easy to understand and implement. In its simplest form, a database is a collection of information organized into a list. Whenever you may A database program, however, is much more powerful than a simple list you keep on paper or in a Microsoft Word document. A database program lets you: ▪ Store Information: A database stores lists of information that are related to a particular subject or purpose. ▪ Find Information: You can easily and instantly locate information stored in a database. ▪ Analyse and Print Information: You can perform calculations on information in a database. ▪ Manage Information: Databases make it easy to work with and manage huge amounts of information. ▪ Share Information: Most database programs (including Microsoft Access) allow more than one user to view and

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<tr><td></td><td colspan="5">work with the same information at once.</td></tr>
<tr><td>Student's obligation</td><td colspan="5">Missed classes will not be compensated including the quizzes and the scheduled assignments. The students will lose marks on unattended classes with quizzes unless a legal document or authorized leave is presented which should explain the excuse of the absence. However, the absent student should take the .responsibility for making up the missed lecture</td></tr>
<tr><td>Required Learning Materials</td><td colspan="5">Power point slides use in the class including pictures and experimental images, and in some points also white board uses to explain module stuffs in more detail.
The lectures are divided into four weekly hours. Mainly, the first two hours will be dedicated for the topic backgrounds and the main principles. Notes and handouts are given to the students containing the detail of the topics. This will be assisted by presentations using word and/or power point slides during the lecture. Discussion time is provided for the students for questions. The second part of the week Practical.</td></tr>
<tr><td rowspan="11">Evaluation</td><td colspan="2">Task</td><td>Weight (Marks)</td><td>Due Week</td><td>Relevant Learning Outcome</td></tr>
<tr><td colspan="2">Paper Review</td><td></td><td></td><td></td></tr>
<tr><td rowspan="6">Assignments</td><td>Homework</td><td>%5</td><td></td><td></td></tr>
<tr><td>Class Activity</td><td>%2</td><td></td><td></td></tr>
<tr><td>Report</td><td></td><td></td><td></td></tr>
<tr><td>Seminar</td><td></td><td></td><td></td></tr>
<tr><td>Essay</td><td></td><td></td><td></td></tr>
<tr><td>Project</td><td>%10</td><td></td><td></td></tr>
<tr><td colspan="2">Quiz</td><td>%8</td><td></td><td></td></tr>
<tr><td colspan="2">Lab.</td><td>%10</td><td></td><td></td></tr>
<tr><td colspan="2">Midterm Exam</td><td>%25</td><td></td><td></td></tr>
<tr><td colspan="2">Final Exam</td><td>%40</td><td></td><td></td></tr>
<tr><td colspan="2">Total</td><td>%100</td><td></td><td></td></tr>
<tr><td>Specific learning outcome:</td><td colspan="5">▪ Install, configure, and interact with a relational database management system;
▪ Describe, define and apply the major components of the relational database model to database design;
▪ Learn and apply the Structured Query Language (SQL)</td></tr>
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	for database definition and manipulation; ▪ Utilize a database modeling technique for a single entity class, a one-to-one (1:1) relationship between ▪ entity classes, a one-to-many (1:M) relationship between entity classes, a many-to-many (M:M) ▪ relationship between entity classes, and recursive relationships; ▪ Define, develop and process single entity, 1:1, 1:M, and M:M database tables; ▪ Learn and implement the principles and concepts of information integrity, security and confidentiality; ▪ Apply ethical computing concepts and practices to database design and implementation.
Course References:	1- Fundamentals of Data modelling design and Application (Prof.(Dr).s.p.s.Saini). 2- Master SQL fundamentals Learning SQL (Alan Beaulieu) - Publisher: O'Reilly Media, Inc. 3- الحاسوب والبرمجيات الجاهزة مهارات الحاسوبComputer Skills (د. محمد بلال الزعبي، د.احمد الشرايعة، د. منيب قطيشات) 4- Microsoft Access 2010 Student Edition CompleteUniversity of Salford 5- http://training.health.ufl.edu 6- http://www.cse.ucsc.ed **7-** http://www.dbbook.com

Course topics (Theory)	**Week**	**Learning Outcome**
Introduction to Database	2	
Introduction to DBMS	2	
Entities and Attributes	3	
Database Schema and SQL	3	
Normalization forms	2	
Practical Topics	**Week**	**Learning Outcome**
Design a simple database.	2	
Design a table	3	▪ Build a new database with related tables.

		▪ Manage the data in a table. ▪ Import Table ▪ Link Table ▪ Datasheet View Table wizard
Create Relationships	1	▪ Define types of relationships and appy
Design a query	4	▪ Query a database using different methods. ▪ Simple Query wizard ▪ Parameter Queries ▪ Crosstab Query ▪ Delete Query ▪ Update Query ▪ Append Query ▪ Make Table Query ▪ SQL Query
Design a form	2	▪ Design a Form. ▪ Auto Forms ▪ Form Wizard ▪ Design View ▪ Chart Wizard ▪ Form Controls Properties ▪ Toolbox ▪ Sort, Retrieve, Analyze Data

Questions Example Design

1. Defile the following items briefly:

1. Database 2.Primary Key 3.Normalazaition

2. True or false type of exams:

In this type of exam a short sentence about a specific subject will be provided, and then students will comment on the trueness or falseness of this particular sentence. Examples should be provided.

3. Multiple choices:

In this type of exam there will be a number of phrases next or below a statement, students will match the correct phrase. Examples should be provided.

EXAMPLE/

- Controlling Data Redundancy in database is _____.

A)- Disadvantage B)- Advantage C)- none

Answer/ B

4. Explain the following items briefly:

1. What is the difference between file system and database?
2. Enumerate four (4) disadvantages of file system.

Q/ Create a database system for Student Registration in High schools.

Students

Sid	Fullname	Gender	Class(FK)	School(FK)
1	Karwan	Male	Class-1	Dldar
2	Saya	Female	Class-1	Bawaji
3	Sozan	Female	Class-2	Mashkhal
4	Abas	Male	Class-1	Dldar

Classes

cid	classname
1	Class-1
2	Class-2
3	Class-3
4	Class-4

Schools

shid	sname	address
1	Bayan	Jameia
2	Dldar	Azadi
3	Bawaji	Grdi
4	Mashkhal	Iskan

Requirements:

1- Create all the tables shown above and make relationship between them using **Lookup Wizard.** (Note: Gender also should be lookup) (7 marks)

2- Create the following quires (8 marks):

a. Student numbers in each school
b. Show students information where school name is Dldar.
c. Show student information by parameter using Gender field.
d. Number of Female student in each class.

Extra notes:

External Evaluator