



الخطة الدراسية

قسم هندسة تقنيات الحاسوب / كلية الهندسة التقنية / جامعة الكفيل / العام الدراسي 2020 – 2021

المرحلة الدراسية:	الثالثة
التخصص:	شبكات إتصالات الحاسوب
اسم المادة الدراسية باللغة العربية:	أنظمة قواعد البيانات
اسم المادة الدراسية باللغة الإنجليزية:	Database Systems
اهداف المادة:	<p>The objective of this course is to study the principles of and implementation of database systems. Topics include data models (relational, document, key/value), storage models, query languages (SQL, stored procedures), storage architectures, indexing, transaction processing, and query processing (joins, sorting, aggregation, and optimization). Case studies on commercial database systems will be used to illustrate these techniques and trade-offs. The course is appropriate for students with strong systems programming skills.</p>
وصف المادة:	<p>This Course aims to give the students a comprehensive and broad understanding of the theory and practical of using DataBase Management System (advantages, and disadvantages), Also train students how to use SQL Server programming language skill. The course focuses on Design Database System using Relational approach. It introduces the principles of Relational Database including some principles such: (Entity, Attribute, domain, Tuple, Row, Column, Table, Keys, Primary key, Candidate Keys, Foreign Keys... etc. Normalizations: 1st, 2nd, 3rd Normal Forms, and ER diagram. The course also includes studying SQL Server programming language commands: Updating commands (Create, Delete, and Amends), retrieval and Query commands (Select, Join, Project, etc.)</p>
عدد الساعات النظرية:	2
عدد الساعات العملية:	2
عدد الوحدات:	6
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رقم الهاتف الجوال (WhatsApp):	07901733096

المنهج المقرر / الجزء النظري:

Week	Syllabus
1	Course Plan and References, Introduction to Database Approach
2	Characteristics of the Database Approach, and Advantages of Using the DBMS
3, 4	Database System Concepts, and Architecture. Data Models, Schemas, and Instances, Three-Schema Architecture and Data Independence
5, 6	Database Languages and Interfaces, the Database System Environment, Centralized and Client/Server Architectures for DBMS, and Classification of Database Management Systems
7	Semester- One Mid Term Examination-One
8, 9	Relational Model Concepts, Relational Model Constraints and Relational Database Schemas.
10, 11	SQL Data Definition and Data Types
12, 13	Basic Retrieval Queries in SQL
14	Basic Update SQL statements
15	Semester - One Mid Term Examination
16, 17	The Relational Algebra and Relational Calculus
18-21	Data Modeling Using the Entity-Relationship
22, 23	Database Design Theory and Normalization Basics of Functional Dependencies and Normalization for Relational Databases
24	Semester-Two Mid Term Examination –one
25, 26	Normal Forms Based on Primary Keys
27, 28	General Definitions of Second Forms
29	General Definitions of Third Normal Forms
30	Semester- Two Mid Term Examination-Two
31	Practical, Written Final Examination

المنهج المقرر / الجزء العملي:

Week	Syllabus
1	Assignment-One Introduction to system DBMS
2	Assignment Two Introduction to client/server environment
3, 4	Assignment Three Installing SQL server 2008R2
5, 6	Assignment Four Create Table using GUI with columns ,Insert Data
7	-

8, 9	Assignment Five Using SQL Statement to Create Tables
10, 11	Assignment Six SQL Retrieval Statements
12, 13	Assignment Seven SQL Selection Statements
14	Assignment Eight INSERT, DELETE, and UPDATE Statements in SQL
15	-
16, 17	Assignment Nine Practice on Algebra and Relational Calculus
18-21	Case Study Analysis and Design of RDBS for SIS And Draw E-R System Diagram
22, 23	System Relations Normalization
24	-
25, 26	Assignment Ten Create system tables
27, 28	Assignment Eleven Design System Forms
29	Assignment Twelve Input data and Test the system Case Study

المصادر:

المراجع الرئيسية:

[1] FUNDAMENTALS OF Database Systems, SIXTH EDITION, 2010

Ramez Elmasri, Department of Computer Science and Engineering, The University of Texas at Arlington, and Shamkant B. Navathe, College of Computing, Georgia Institute of Technology

المراجع المساعدة:

[1] DATABASE SYSTEM CONCEPTS, SIXTH EDITION, 2011

Abraham Silberschatz, Yale University, Henry F. Korth, Lehigh University, and S. Sudarshan, Indian Institute of Technology, Bombay