Faculty of Computers & Information Technology

Database-2

Information :

Course Code :	ISY 312	**Level**	: Undergraduate	**Course Hours :**	3.00- Hours

Department :	Department of Information Systems

Instructor Information :

Title	Name	Office hours
Associate Professor	Fahad Kamal Eldin Thabit Abdel Wahed Al Sharif	1
Assistant Lecturer	Mohamed Mahmoud Hasan Hamada	

Area Of Study :

Advanced concepts of Database Systems,Enhanced Database Modeling using EER, Advanced SQL Query processing, Database Security Issues, Functional Dependencies and Relational Data Normalization, Programming of Web Databases, Emerging Database Technologies and Applications

Description :

The main objective of this course is to provide students with an in-depth understanding of the design and implementation of database systems and the administration features of any DBMS. Topics Include: Review of Relational model, E-R Diagramming, Normalization, SQL, Review of Relational Algebra, Query Processing and Optimization, Transaction Processing, Concurrency Control and Recovery, Database Security and Authorization, Database Architectures, Distributed Databases: Architecture, Distributed transaction processing, Object Oriented Databases, Data Warehousing: Heterogeneous component systems, data scrubbing, DW Design. On-Line Analytical Processing (OLAP). Upon successful completion of this course, students will have advanced skills to effectively develop, implement and manage medium to large-scale database management systems

Course outcomes :

a.Knowledge and Understanding: :

1 -	• Demonstrate knowledge and understanding of enhanced database design concepts
2 -	• Demonstrate knowledge and understanding of advanced SQL query manipulation and processing.
3 -	• Demonstrate knowledge and understanding of database security issues
4 -	• Demonstrate ability of using SQL to enforce database security
5 -	• Demonstrate knowledge and understanding of distributed database concepts.
6 -	• Demonstrate knowledge and understanding of programming Web databases
7 -	• Demonstrate knowledge and understanding of Object-oriented DBMS
8 -	• Demonstrate knowledge and understanding of Object-RelationalDBMSs
9 -	• Demonstrate knowledge and understanding of using SQL3

b.Intellectual Skills: :

1 -	• Employ analytical skills as appropriate during database design and manipulation process

2 -	• Design and implement practical database system. In particular be able to discus
3 -	• explain and apply the relational model and mappings from conceptual designs. In particular normalizations.

c.Professional and Practical Skills: :

1 -	• Use appropriate database design methodology.
2 -	• Use the (DBMSs) effectively
3 -	• Prepare and deliver coherent and structured verbal and written technical reports.
4 -	• Implement a real world computer DB information system.
5 -	• Plan and undertake a major individual/ group small projects

d.General and Transferable Skills: :

1 -	• Research on emerging database technologies and applications
2 -	• Display an integrated approach to the deployment of communication skills
3 -	• Work effectively with database owners and for database users

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Revision on Database Modeling and Design in ER and Relational Data Models	3	2	2
Advanced SQL Query Manipulation	3	2	2
Relational Query Optimization	3	2	2
Data Normalization	3	2	2
Distributed Databases	3	2	2
Transaction Processing	3	2	2
Concurrency & Backup Controls	3	2	2
Object-Relational DBMS (SQL3)	3	2	2
Web Database Technologies (MySQL)	3	2	2
XML	3	2	2
Emerging Database Applications	3	2	2

Teaching And Learning Methodologies :

Lectures
Practical training
Presentation
Projects

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Final Exam	40.00	15	
Midterm Exam I	15.00	6	

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Midterm Exam II	15.00	12	
Project	20.00	14	
Research/Presentation	10.00	14	

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