FUTURE UNIVERSITY IN EGYPT
جامعة المستقبل

Faculty of Computers and Information Technology

Database System-1

Information :

Course Code :	IS211	**Level :**	Undergraduate	**Course Hours :**	3.00- Hours

Department : Faculty of Computers and Information Technology

Instructor Information :

Title	Name	Office hours
Lecturer	Mohamed Attia Mohamed	5
Lecturer	Samah Ahmed Zaki Hassan	1
Assistant Lecturer	Mohamed Mahmoud Hasan Hamada	1
Teaching Assistant	Maha Farghaly Ali Ahmed	3

Area Of Study :

Introduce basic concepts of database systems.
Learn how to design, construct and manage databases.
Illustrate different components of a database management system
Present the database development process
Develop the relational data model
Use Structured Query Language (SQL)
Gain hands-on experience to understand the concepts and techniques for designing and implementing forms, queries, reports and using a popular database management system (DBMS) and object-oriented programming language.
Use effectively communication skills.

Description :

The main objective of this course is to provide students with the background to design, implement, and use database management systems. Topics Include: Basic concepts, database system environment, DBMS components and architecture, database design process, high-level data models, ER and EER models, the relational data model, relational languages, SQL, Data Definition Language (DDL), Data Manipulation Language (DML), introduction to functional dependencies and normalization, social and ethical context of databases.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Explain the specifications and components of Database systems.
2 -	Comprehend the functionalities of Database management systems.
3 -	Explain the relational data model.
4 -	Explain the relational algebra as a formal language to manipulate relational data.
5 -	Comprehend data modeling and database designing.
6 -	Discuss the correspondence between Relational algebra and SQL.

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b.Intellectual Skills: :	
1 -	Convert data models.
2 -	Formulate relational algebra expressions/SQL statements.
3 -	Express real-world environment in data models (database design skills).
4 -	Discover Entity Relationship Model to design databases.
5 -	Convert ER Models to relational models.
6 -	Normalize Database Tables.
7 -	Construct SQL language to define and manipulate relational databases.
c.Professional and Practical Skills: :	
1 -	Form and use Structured Query Language (SQL) in database construction anddata manipulation.
2 -	Hand on some well-known database management systems.
3 -	Design database using specific software.
4 -	Form design and implement database.
5 -	Report on design and implement database.
d.General and Transferable Skills: :	
1 -	Enhance work presentation skills.
2 -	Develop problem solving skills.
3 -	Demonstrate communication skills.
4 -	Work coherently and successfully as a part of a team.
5 -	Enhance data and information retrieval skills

ABET Course outcomes :	
1 -	Define basic concepts of database systems, including history, basic architecture, data models and design, and applications
2 -	Design, construct and manage databases
3 -	Illustrate different components of a database management system
4 -	Present the database development process
5 -	Implement a database following the relational data model
6 -	Use Structured Query Language (SQL)
7 -	Apply the concepts and techniques for designing and implementing forms, queries, reports and using a popular database management system (DBMS)

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction to database systems	4	2	2
File processing and database systems	4	2	2
Database system components and characteristics	4	2	2
Relational data Model	4	2	2
Relational Algebra and an introduction to SQL	4	2	2
The Entity Relationship Model	4	2	2
Data modelling and database designing	4	2	2

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Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Data modelling and database designing	4	2	2
Mid Term Exam	2		
Converting ER model to relational model	4	2	2
Converting ER model to relational model	4	2	2
Database tables and normalization	4	2	2
Database Administration	4	2	2
Final Exam	2		

Teaching And Learning Methodologies :

Interactive Lectures including Discussions

Practical Lab Sessions

Case Studies

Brain Storming and Problem Solving

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	5.00	2	
Practical Exam	10.00	12	
Presentations	5.00	10	
Quizzes	5.00	5	
Team Work Projects	5.00	11	
Written Final Exam	40.00	14	
Written Midterm Exam (s)	30.00	9	

Course Notes :

An Electronic form of the Course Notes and all the slides of the Lectures is available on the Students Learning Management System (Moodle)

Recommended books :

ÅConnolly & Begg ñDatabase Systems, A practical approach to
ÅDesign, implementation, and managementò, Pearson, last edition.
ÅISBN-13: 978-0133970777 ISBN-10: 0133970779

Web Sites :

www.ekb.eg

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