

Faculty of Computers and Information Technology

Data Warehousing

Information :

Course Code : IS442

Level : Undergraduate

Course Hours : 3.00- Hours

Department : Department of Information Systems

Instructor Information :

| Title | Name | Office hours |
|--------------------|---------------------------------------|--------------|
| Lecturer | MOHAMED ATTIA MOHAMED ABDELGAWAD | 5 |
| Lecturer | Amira Mohey El Din Mohamed El Mandouh | |
| Assistant Lecturer | Mohamed Mahmoud Hasan Hamada | |
| Assistant Lecturer | Mohamed Mahmoud Hasan Hamada | |

Area Of Study :

Gather requirements for data warehousing.
 Explain data warehouse architecture.
 Design a dimensional model for data warehousing.
 Design a physical model for data warehousing.
 Discuss extract, transform and load strategies.
 Identify Online Analytical Processing (OLAP) databases.
 Design and develop business intelligence applications.
 Expand and support a data warehouse.
 Use effectively communication skills.

Description :

Introduction to Data Warehousing, Evolution of DSS, DW General Topics, Data Warehouse Structure: Granularity, Data Warehouse Design, Building Dimensional DW, OLAP tools, Aggregates, ELT Extraction/Transformation/ Load processes and tools, Issues of DW Architecture, Enterprise DW vs. Data Marts, DW and Data Mining

Course outcomes :

a.Knowledge and Understanding: :

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|-----|--|
| 1 - | Discuss the concepts of data warehousing and data mining. |
| 2 - | Explain data warehouse architectures, OLAP and the project planning aspects in building a data warehouse |
| 3 - | Discuss extract, transform and load strategies |
| 4 - | Explain the role played by knowledge in a diverse range of intelligent systems |

b.Intellectual Skills: :

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|-----|---|
| 1 - | Apply the dimensional modeling technique for designing a data warehouse |
| 2 - | Develop a data warehouse architecture |

c.Professional and Practical Skills: :

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|-----|--|
| 1 - | Identify Online Analytical Processing (OLAP) databases |
|-----|--|

2 - Design and develop business intelligence applications.

d.General and Transferable Skills :

1 - Work in a team effectively and efficiently considering time and stress management

2 - Apply communication skills and techniques in presentations and report writing for range of audiences using various methods and tools

ABET Course outcomes :

1 - Demonstrate adequate understanding of basic architecture and techniques for storage and provision of enterprise data

2 - Develop queries and essential business intelligence reporting

3 - Demonstrate adequate understanding of data modeling, including dimensional modeling

4 - Develop steps of an enterprise data warehousing solution

5 - Use Business Intelligence tools from end-to-end perspective

Course Topic And Contents :

| Topic | No. of hours | Lecture | Tutorial / Practical |
|---|--------------|---------|----------------------|
| Data Warehouse Concepts | 4 | 2 | 2 |
| Data Warehouse Design Concepts | 4 | 2 | 2 |
| Data Warehouse Lifecycle | 4 | 2 | 2 |
| Dimensional Model Concepts | 4 | 2 | 2 |
| Dimensional Model Design | 4 | 2 | 2 |
| Designing the Physical Database | 4 | 2 | 2 |
| Concepts of Extract, Transform | 4 | 2 | 2 |
| Concepts of Load (ETL) | 4 | 2 | 2 |
| Mid-Term Exam | 2 | | |
| Concepts of Business Intelligence Applications | 4 | 2 | 2 |
| Concepts of Business Intelligence Applications | 4 | 2 | 2 |
| Designing and Developing Business Intelligence Applications | 4 | 2 | 2 |
| Presentation/Discussion of Case Studies | 4 | 2 | 2 |
| Final Exam | 2 | | |

Teaching And Learning Methodologies :

Interactive Lectures including discussion

Practical Lab Sessions

Self-Study (Project / Reading Materials / Online Material / Presentations)

Case Studies

Problem Solving

Course Assessment :

| Methods of assessment | Relative weight % | Week No | Assess What |
|-----------------------|-------------------|---------|-------------|
| Assignments | 5.00 | 4 | |

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|---------------------------|-------|----|--|
| Final Exam | 40.00 | 14 | |
| Midterm Exam (s) | 20.00 | 9 | |
| Others (Participation) | 5.00 | | |
| Presentations | 5.00 | 10 | |
| Quizzes | 10.00 | 5 | |
| Team Work Projects | 15.00 | 12 | |

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)

Web Sites :

www.ekb.eg