**Course Specification**

(IS 422 Data Warehousing)

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| **University:** | Helwan University |
| **Faculty:** | Faculty of Computers & Information |
| **Department:** | Information systems |

**1. Course Data**

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| --- | --- |
| **Code:** | **IS 422**  |
| **Course title:** | Data Warehouse |
| **Level:** | 4 |
| **Specialization:** | Information systems |
| **Credit hours:** | 3 hours |
| **Number of learning units (hours):**  | (3) theoretical (2) tutorial |

**2. Course Objective**

This course provides an introduction to data warehouse design. Topics in data modeling, database design and database access are reviewed.  Issues in data warehouse planning; design, implementation, and administration are discussed in a seminar format.   The role of data warehouse in supporting Decision Support Systems (DSS) is also reviewed.

**3. Intended Learning Outcomes:**

1. **Knowledge and Understanding**

A10. Apply the principles of Information Technologies.

1. **Intellectual Skills**

 B6. Distinguish the role of IS in the society.

 B22. Create and justify Software different designs.

B15. Focus, gather information, integrate, and evaluate the data for Problem Solving.

1. **Professional and Practical Skills**

C7. Develop and use DB systems.

C16. Plan different management techniques.

1. **General and Transferable Skills**

D6. Practice Independent Learning techniques.

**4. Course contents**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topics** | **No. of hours** | **Lecture** | **Tutorial/ Practical** |
| Introduction to Data Warehousing | 3 | 1 | 1 |
| DW General Topics | 3 | 1 | 1 |
| Data Warehouse Structure: Granularity | 3 | 1 | 1 |
| Data Warehouse Design | 6 | 2 | 2 |
| Building Dimensional DW | 6 | 2 | 2 |
| OLAP tools | 3 | 1 | 1 |
| Aggregates | 3 | 1 | 1 |
| ELT- Extraction/Transformation/ Load processes and tools | 3 | 1 | 1 |
| Issues of DW Architecture | 3 | 1 | 1 |
| Enterprise DW vs. Data Marts | 3 | 1 | 1 |
| DW and Data Mining | 3 | 1 | 1 |

**Mapping contents to ILOs**

|  |  |
| --- | --- |
| Topic | Intended Learning Outcomes (ILOs) |
| Knowledge and understanding | Intellectual Skills | Professional and practical skills | General and Transferable skills |
| Introduction to Data Warehousing | A10 |  | C7 |  |
| DW General Topics | A10 |  | C16 |  |
| Data Warehouse Structure: Granularity | A10 | B15 | C16 |  |
| Data Warehouse Design | A10 |  | C16,C7 |  |
| Building Dimensional DW | A10 | B22 | C16,C7 |  |
| OLAP tools | A10 | B15,B6 |  |  |
| Aggregates | A10 |  | C7 |  |
| ELT- Extraction/Transformation/ Load processes and tools | A10 |  |  | D6 |
| Issues of DW Architecture | A10 | B15 |  |  |
| Enterprise DW vs. Data Marts | A10 | B6 |  |  |
| DW and Data Mining | A10 |  | C7 | D6 |

**5. Teaching and Learning Methods**

Lectures

Exercises

Lab Work

**6. Teaching and Learning Methods for students with limited capability**

 Using data show

 e-learning management tools

**7. Students Evaluation**

**a) Used Methods**

Written Exams

Assignments.

**b) Time**

Assessment 1: Test 1 Week 4

Assessment 2: Test 2 Week 7

Assessment 3: Midterm Exam Week 10

Assessment 5: final written exam Week 16

**c) Grades Distribution**

Mid-term Examination 20 %

Final-Year Examination 60 %

Semester Work 20 %

 Total 100%

Any formative only assessments

**List of Books and References**

**a) Notes**

Course Notes

**b) Mandatory Books**

- W.H. Inmon, Building the Data Warehouse, 2nd Edition, John Wiley & Sons.

**c) Suggested Books**

**d) Other publications**

**Course Coordinator:**  Dr. Sherif Kholif

**Chairman of the Department:** Prof. Dr. Yehia Helmy