

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Data Warehousing
Course number	ITIS4332
Faculty	
Department	
Course type	Major Needs
Course level	4
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

- 1 - This course provides concepts, principles, and tools for designing, implementing, and using Data Warehouses.
- 2 - introduce database constructs such as Operational Data Store (ODS), Data Warehouse, and Data Mart, as well as their components
- 3 - study the differences between Ralf Kimball's and Bill Inmons approaches, roles and responsibilities in the design and implementation of a Data Warehouse, project management guidelines and techniques, requirements gathering, dimensional modeling, Extract Transform and Load (ETL) architecture, specification and data loading, master and reference data management, integration approaches (ETL, EII, EAI), analytical reporting concepts, data governance and recent trends in the data warehouse domain.
- 4 - The course will leverage a portfolio of SQL Server tools that include SQL Server DBMS, SQL Server Integration Services (SSIS), SQL Server Reporting Services (SSRS) and SQL Server Analysis Service (SSAS)

Intended Learning Outcomes

Knowledge and Understanding	<ul style="list-style-type: none">* a1 gain technical knowledge and comprehension about data warehouses* a2 Describe various database constructs ODS, Data Warehouse, Data Mart* a3 Describe the components of a data warehouse* a4 Describe various integration approaches ETL, EII, EAI* a5 Describe a Master Data Management (MDM) solution* a6 Describe Business Intelligence components
Intellectual Skills	<ul style="list-style-type: none">* b1 Analysis of complex management case studies and problems* b2 Critically evaluate and select appropriate data warehouses solutions.* b3 Perform comparisons between (methods, techniques...etc)
Professional Skills	<ul style="list-style-type: none">* c1 Design and implement data warehouse and business intelligence components* c2 Create database objects using popular database management system products* c3 Develop solutions for certain organizational and business problems
General Skill	<ul style="list-style-type: none">* d1 Collaborate effectively within team* d2 Work in stressful environment and within constraints* d3 Manage tasks and resources* d4 Acquire entrepreneurial skills* d5 Communicate effectively by oral, written and visual means* d6 Develop a range of fundamental research skills, through the use of online resources, technical repositories and library-based material

Course Contents

1 - Introduction to Data Warehousing
2 - Data Warehouse Constructs and Components
3 - Project Management & Requirements Gathering
4 - Introduction to Dimensional Modeling
5 - Dimensional Modeling Design
6 - Technical Architecture
7 - Introduction to ETL design
8 - ETL Development
9 - Master Data Management & Data Governance
10 - Introduction to Business Intelligence
11 - Business intelligence design and development

Teaching and Learning Methods

1 - Lectures
2 - Tutorial Exercises
3 - Practical Exercises

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
Assignments		10
Midterm Exam	8th week	25
Presenation		15
Final Exam	16th week	50

Books and References

Essential books	Ralph Kimball, Margy Ross, Warren Thornthwaite, Joy Mundy, Bob Becker. The Data Warehouse Lifecycle Toolkit: Practical Techniques for Building Data Warehouse and Business Intelligence Systems. Wiley. ISBN: 9780470149775
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Knowledge and Skills Matrix

Main Course Contents	Study Week	Knowledge and Understanding	Intellectual Skills	Professional Skills	General Skill
Introduction to Data Warehousing	1	a1,a2,a3	b3	c1,c3	
Data Warehouse Constructs and Components	2	a2,a3	b1,b2,b3	c1,c2,c3	d1..d6
Project Management & Requirements Gathering	3	a1,a2	b1,b2,b3	c2,c3	d1..d6
Introduction to Dimensional Modeling	4	a3	b3	c1,c2,c3	d1..d6
Dimensional Modeling Design	5	a1,a2,a3	b1,b2,b3	c1,c2,c3	d1..d6
Technical Architecture	6	a1,a2,a3	b1,b2,b3	c1,c2,c3	d1..d6
Introduction to ETL design	7	a1,a3,a4	b1,b2,b3	c1,c2,c3	d1..d6
ETL Development	8	a1,a3,a4	b1,b2,b3	c1,c2,c3	d1..d6
Master Data Management & Data Governance	9	a1,a5	b1,b2,b3	c1,c2,c3	d1..d6
Introduction to Business Intelligence	10-11	a1,a5,a6	b1,b2,b3	c1,c2,c3	d1..d6
Business intelligence design and development	12-15	a1,a5,a6	b1,b2,b3	c1,c2,c3	d1..d6