MCA (Master of Computer Applications)
MCA (Master of Computer Applications) Semester II

Course Code	PS02EMCA58	Title of the Course	DATA MINING AND DATA WAREHOUSING
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	1. To understand the need of Data Warehouses, and the difference between usage of operational and historical data stores. 2. To be able to differentiate between query tools & Data Mining tools. 3. To understand the architecture of a Data Warehouse and the need for preprocessing.

Course Content		
Unit	Description	Weightage* (%)
1.	**Data Warehousing and Data Mining - Introduction** - Data warehouse introduction - Characteristics of data warehouse - Data warehouse delivery method - Data mining introduction - Introduction and comparison of OLTP and OLAP - Three Data Warehouse Models: - Enterprise Warehouse - Data Mart - Virtual Warehouse	25
2.	**Data Warehouse Architecture** - System Process - Process flow within an data warehouse - Extract and Load Process - Clean and Transform data - Backup and Archive Process - Query Management Process - Process Architecture - Load and Warehouse Manager - Query Manager - Detailed and Summary Information - Metadata	25

3.	**Database Design – Logical** - Database Schema – Starflake - Partitioning strategy - Aggregations - Data Marting technique - Metadata - System and Data Warehouse Process Manager	25
4.	**Data mining rules** - Basics of Data Mining - Operating Data Warehouse - Data mining Vs Query tools - Data Learning - Benefits of data mining - Basics of Supervised & Unsupervised Learning - Difference between Classification & Prediction - Introduction to Association Rule Mining - Apriori Algorithm - Examples of Enterprise Data Mining Applications	25

Teaching-Learning Methodology	Blended learning approach incorporating traditional classroom teaching as well as online / ICT-based teaching practices

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	create a Starflake schema for a given Data Warehousing requirements.
2.	apply pre-processing on existing operational & historical data for creation of Data warehouse.
3.	perform data mining.

Suggested References:	
Sr. No.	References
1.	S. Anahory & D. Murray: Data Warehousing in the real world – Addison Wesley.
2.	R. Kinball: Data Warehouse Toolkit – John Wiley & Sons.
3.	R. Kinball, L.Reeves : The Data Warehouse Lifecycle Toolkit – John Wiley & Sons.
4.	Pieter Adriaans, Dolf Zantinge, "Data Mining", Addison Wesley, 1996.
5.	G.K. Gupta , " Introduction to Data Mining with Case Studies", PHI.
6.	Paulraj Ponniah, "Data Warehousing Fundamentals: A Comprehensive Guide for IT Professionals", Wiley-India.
7.	A B M Shawkat Ali, Saleh A. Wasimi, " Data Mining : Methods and Techniques", Cengage Learning.
8.	Daniel T. Larose, "Data Mining Methods & Models", Wiley-India.

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