



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

Course Code	PS02EMCA52	Title of the Course	DATA MINING AND DATA WAREHOUSING
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	<ol style="list-style-type: none">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.
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Course Content		
Unit	Description	Weightage* (%)
1.	Data Warehousing and Data Mining - Introduction <ul style="list-style-type: none">- 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:<ul style="list-style-type: none">- Enterprise Warehouse- Data Mart- Virtual Warehouse	25
2.	Data Warehouse Architecture <ul style="list-style-type: none">- System Process - Process flow within an data warehouse<ul style="list-style-type: none">- Extract and Load Process- Clean and Transform data- Backup and Archive Process- Query Management Process- Process Architecture<ul style="list-style-type: none">- Load and Warehouse Manager- Query Manager- Detailed and Summary Information- Metadata	25





3.	Database Design – Logical <ul style="list-style-type: none">- Database Schema – Starflake- Partitioning strategy- Aggregations- Data Marting technique- Metadata- System and Data Warehouse Process Manager	25
4.	Data mining rules <ul style="list-style-type: none">- 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
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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.

