GUJARAT TECHNOLOGICAL UNIVERSITY

MASTER OF BUSINESS ADMINISTRATION (Part-Time)

Year III (Semester: –VI) (W.E.F. Academic Year 2017-18)

Specialization: Information Technology Management
Subject Name: Data Warehousing and Data Mining (DWDM)
Subject Code: 3569953 Subject Credits: 3 Total Marks: 150

1. **Learning Outcome:**
    - Understand the concepts of Data Warehousing
    - Understanding how Data warehouses can be used for decision support, trend analysis, business forecasting etc.
    - Understand how Data mining transforms data into intelligent business insight.
    - Understand the knowledge discovery process including data selection, cleaning, coding, using different statistical pattern recognition and machine learning techniques, and reporting and visualization of the generated structures.
    - Compare the various approaches to data warehousing and data mining implementations

2. **Course Duration:** The course duration is of **36 sessions of 75 minutes** each

3. **Course Content:**

Module No.	Modules / Sub-Modules	No. of Sessions	70 Marks (External Evaluation)
I	**Data Warehousing concepts:** Introduction to Data warehousing, Difference between DWH and OLTP-based DBMS environments **Development Process**: DW development life cycle, DW development Methodologies, DW Process framework, Data Warehouse Design, Detailed Dimensional Modeling, Reporting and Query tools, ,Data Extraction, Transformation and Loading Process, Meta Data Management, Data Marts, OLAP	9	17
II	**Data Mining concepts:** Data Mining fundamentals: Data types & Functionalities, Patterns in Data, Types of Data Mining, Data Pre-processing, cleaning, integration and reduction	9	17
III	**ASSOCIATION RULE MINING AND**	9	18

	CLASSIFICATION Mining Frequent Patterns, Associations And Correlations – Mining Methods – Mining Various Kinds Of Association Rules – Correlation Analysis – Constraint Based Association Mining – Classification And Prediction – Basic Concepts – Decision Tree Induction – Bayesian Classification – Rule Based Classification – Classification By Back Propagation – Support Vector Machines – Associative Classification – Lazy Learners – Other Classification Methods – Prediction.		
IV	**CLUSTERING AND TRENDS IN DATA MINING** Cluster Analysis – Types Of Data – Categorization Of Major Clustering Methods – K-Means– Partitioning Methods – Hierarchical Methods – Density-Based Methods –Grid Based Methods – Model-Based Clustering Methods – Clustering High Dimensional Data – Constraint – Based Cluster Analysis – Outlier Analysis – Data Mining Applications. **Overview of Text Mining, Web mining & Multimedia Data Mining**	9	18
V	**Practical:** Hands on training on the concepts taught using tools such as XML Miner & WeKA Students are required to make presentation on a**pplications of Data mining in b**usiness areas like Risk management and targeted marketing, Customer profiles and feature construction, Medical applications, Scientific Applications etc.	---	(30 marks CEC)

4. Teaching Methods:

The course will use the following pedagogical tools:

- Lectures
- Case Discussions and Role Playing
- Audio-visual Material (Using CDs/Clippings/ online videos)
- Assignments and Presentations

5. Evaluation:

The evaluation of participants will be on continuous basis comprising of the following elements:

A	Continuous Evaluation Component comprising of Projects / Assignments / Quiz / Class Participation / Class test / Presentation on specific topic etc.	(Internal Assessment- 50 Marks)
B	Mid-Semester examination	(Internal Assessment-30 Marks)
C	End –Semester Examination	(External Assessment-70 Marks)

6. Reference Books:

Sr. No.	Author	Name of the Book	Publisher	Year of Publication
1	Alex Berson and Stephen J.Smith	Data warehousing, data mining & OLAP	McGraw-Hill	Latest
2	Jiawei Han and Micheline Kamber	Data Mining Concepts And Techniques	Elsevier	Latest
3	George M.Marakas	Modern data mining warehousing, mining and visualization	Pearson	Latest
4	Soumendra Mohanty	Data Warehousing: Design, Development and best practices	McGraw-Hill	Latest
5	Paulraj Ponnaiah	Data warehousing fundamentals	Wiley	Latest
6	Ralph Kimball	The Data warehouse Life cycle tool kit	Wiley	Latest
7	Alan R Simon, Steven L Shaffer,	DW and BI for e-Commerce	Morgan Kaufman Publication	Latest
8	Jeffrey Hoofer , Mary B. Prescott	Modern database management systems	Pearson Education	Latest
9	Sam Anahory & Dennis Murray	Data warehousing in the real world	Addison Wesley publishers	Latest

Note: Wherever the standard books are not available for the topic appropriate print and online resources, journals and books published by different authors may be prescribed.

7. List of Journals / Periodicals / Magazines / Newspapers, etc.

1. International Journal of Data Mining and Emerging Technologies
2. International Journal of Data Mining, Modelling and Management
3. International Journal of Data Warehousing and Mining
4. Analytics India (Magazine)