

## **DATA MINING AND DATA WAREHOUSING**

### **Unit I**

Introduction: Data mining-motivation, importance-DM Functionalities, Basic Data Mining Tasks, DM Vs KDD,DM Metrics, DM Applications, Social implications.

### **Unit II**

Data Warehousing: Difference between Operational Database and Data warehouse-Multidimensional Data Model: From tables to data Cubes, Schemas, Measures-DW Architecture: Steps for design and construction of DW, 3-tier DW Architecture-DW Implementation: Efficient computation of DATA Cubes, Efficient Processing of OLAP queries, Metadata repository.

### **Unit III**

Data Preprocessing: Data Mining Primitives, Languages: Data cleaning, Data Integration and Transformation, Data Reduction. Discretization and concept Hierarchy Generation. Task-relevant data, Background Knowledge, Presentation and Visualization of Discovered Patterns. Data Mining Query Language-other languages for data mining.

### **Unit IV**

Data Mining Algorithms: Association Rule Mining: MBA Analysis, The Apriori Algorithm, Improving the efficiency of Apriori. Mining Multidimensional Association rules from RDBMS and DXV. Classification and Predication: Decision Tree, Bayesian Classification back propagation, Cluster Analysis: Partitioning Methods, Hierarchical Method, Grid-based methods, Outlier Analysis.

### **Unit V**

Web, Temporal And Spatial Data Mining: Web content Mining, Web Structure Mining, Web usage mining. Spatial Mining: Spatial DM primitives, Generalization and Specialization, Spatial rules, spatial classification and clustering algorithms. Temporal Mining: Modeling Temporal Events, Times series, Pattern Detection, Sequences.

### **Text Book(s)**

1. Jiawei Han & Micheline Kamber, "Data Mining: Concepts and Techniques". Harcourt India Private Limited, First Indian Reprint, 2001
2. Margaret H. Dunham, "Data Mining: Introductory and Advanced Topics", Pearson Education, First Indian Reprint, 2003
3. Arun K. Pujari, "Data Mining Techniques", University Press (India) Limited, First Edition, 2001
4. Efrim O. Mallach, "Decision Support and Data Warehouse Systems", McGraw-Hill International Edition, 2000