

Devi Ahilya University, Indore, India Institute of Engineering & Technology				II Year M.E. (Computer Engineering Sp. in Software Engineering) (Part Time)			
Subject Code & Name	Instructions Hours per Week			Credits			
SEP3G4	L	T	P	L	T	P	Total
Data Mining & Warehousing	3	1	2	3	1	1	5
Duration of Theory Paper: 3 Hours							

Objectives:

- To develop the abilities of critical analysis to data mining systems and applications.
- To implement practical and theoretical understanding of the technologies for data mining
- To understand the strengths and limitations of various data mining models.

Unit-I

Data Mining -Introduction: Data Mining Primitives, Languages, and System Architectures: Data mining primitives, Query language, Designing GUI based on a data mining query language, Knowledge Discovery in Databases (KDD), KDD Process, Data Preprocessing, Data Cleaning, Data Transformation, Data Compression and Dimension Reduction, Principal Component Analysis, Binning Methods.

Unit-II

Data Warehousing –Introduction and Design: Overview and Concepts: Need for data warehousing, basic elements of data warehousing, Architecture and Infrastructure: Architectural components, Infrastructure and metadata. Data Design And Data Representation: Principles of dimensional modeling, Dimensional modeling, data extraction, transformation and loading, data quality. OLAP in data warehouse –ROLAP, MOLAP, HOLAP. OLTP Vs OLAP, Various Data Warehouse Schemas.

UNIT-III

Association & Classification Techniques: Introduction, Frequent itemset mining methods –

Apriori, FP-Growth, Pattern evaluation methods, Basic concepts of classification, Decision tree induction, Bayes classification, Rule-based classification.

UNIT-IV

Clustering Techniques: Introduction, Clustering paradigms; Partitioning algorithms – K-Means, K-Medoid, CLARA; Partition based clustering – BIRCH; Density based clustering - DBSCAN; Categorical clustering algorithms, Evaluation of Clustering.

UNIT-V

Other DM techniques & Web Mining: Spatial Mining, Spatial Mining tasks, Spatial clustering, Spatial Trends. Web Mining : Introduction Web content mining, Web structure Mining, Web Usage Mining.

Temporal and spatial DM: Temporal association rules, Sequence Mining, GSP, SPADE, SPIRIT, and WUM algorithms, Episode Discovery, Event prediction, Time series analysis.

Reference Books:

1. Data Mining Techniques; ArunK.Pujari ; University Press.
2. Data Mining Concepts and Techniques, Jiawei Han Micheline Kamber,Jianpei, Morgan Kaufmann.
3. Data Mining; Adriaans&Zantinge; Pearson education.
4. Mastering Data Mining; Berry Linoff; Wiley.
5. PaulrajPonniah, “Data Warehousing Fundamentals”, John Wiley.
6. Text Mining Applications, Konchandy, Cengage