Lesson Plan E Semester 2024

Stream : CSE
Subject : Data Warehousing and Data Mining
Subject Code : PEC-IT602B

1. Textbook:

Te1: ***Data Mining Concepts and Techniques*** *- Jiawei Han and M Kamber, Elsevier Publication.3rd ED.*
Te2: ***Introduction to Data Mining*** *- Vipin Kumar, Pang-Ning Tan, Michael Steinbach, Addison Wesley.*

2. References

R1: ***Data Mining Techniques – Arun K. Pujari, University Press***

3. E-Learning Courses for Reference:

W1: https://onlinecourses.nptel.ac.in/noc21_cs06/

Lecture No. (L)	Description	Reference(s) Text	Teaching aid & methodology
L1	Overview of Data mining	Te1, Te2	WB, L
L2	Application area, Type of data can be mined	Te1, Te2	WB, L
L3	Overview of Data warehousing	Te1 (Chap 1)	WB, L
L4	Mining frequent patterns: Association and correlations; Market basket analysis, frequent itemset	Te1 (Chapter 6)	WB, PPT, L, PS
L5	Apriori Algorithm, Apriori properties, closure	Te1(6)	WB, L
L6	Pruning, Association analysis : vertical approach ECLAT	Te1(Chapter 6.2)	WB, PPT, L, PS
L7	Association analysis : pattern tree, FP tree, FP growth	Te1 (Chapter 6.2)	WB, PPT, L, PS
L8	Lift, Uninteresting rules, Correlation, Maximal Frequent Item Set, and Closed Frequent Item Set.	Te3 (Chapter 6.3)	WB, PPT, L, PS
L9	Sequential Pattern Mining concepts, subsequences, primitives	Te3 (Chapter 5)	WB, PPT, L, PS
L10	SPADE algorithm	Te3 (Chapter 5)	WB, PPT, L, PS
L11	Cluster Analysis – Types of Data in Cluster Analysis, Partitioning methods	Te1 (Chapter 10)	WB, PPT, L, PS
L12	Hierarchical Methods, agglomerative , divisive methods, CLARA	Te1 (Chapter 10)	WB, PPT, L, PS
L13	Density based method DBSCAN, improved algorithm BIRCH	Te1 (Chapter 10)	WB, PPT, L, PS
L14	Classification algorithm, general approach, Decision tree	Te1 (Chapter 8)	WB, PPT, L, PS
L15	Decision tree properties and entropy	Te1(Chapter 8)	WB, PPT, L, PS
L16	Information gain and Gini index	Te1 (Chapter 8)	WB, PPT, L, PS
L17	SVM classifier	Te1 (Chapter 9)	WB, PPT, L, PS
L18	Bayesian classifier	Te1 (Ch 9)	WB, PPT, L,

			PS
L19	Transactional Patterns and other temporal based frequent patterns Periodicity Analysis for time related sequence data	Te1 (Chapter 4)	WB, PPT, L, PS
L20	Mining Time series Data	Te1 (Chapter 5)	WB, PPT, L
L21	Trend analysis, Seasonality analysis, Moving average	Te1 (Chapter 5),Te2	WB, PPT, L, PS
L22	Similarity search in Time-series analysis	Te1 (Chapter 5),Te2	WB, PPT, L, PS
L23	Methodologies for stream data processing and stream data systems	Te1 (Chapter 6), Te2	WB, PPT, L, PS
L24	Frequent pattern mining in stream data,	Te1 (Chapter 6)	WB, PPT, L, PS
L25	Sequential Pattern Mining in Data Streams	Te1 (Chapter 6)	WB, PPT, L, PS
L26	Classification and clustering of data streams; Dynamic data streams	Te3 (Chapter 4)	WB, PPT, L
L27	Graph Mining, frequent subgraph mining	Te1 (Chapter 7)	WB, PPT, L, PS
L28	Social Network Analysis; Centrality analysis, Influence Analysis	Te1 (Chapter 7)	WB, PPT, L, PS
L29	Community detection, link prediction	Te1 (Chapter 7)	WB, PPT, L, PS
L30	Ensemble learning, Feedback control systems, Modulation & filtering for communication	Te1 (Chapter 7)	WB, PPT, L
L31	Classification : Class Imbalance Problem	Te1 (Chapter 8)	WB, PPT, L, PS
L32	Web Mining, mining multimedia data on the web	Te1 (Chapter 7)	WB, PPT, L, PS
L33	Mining the web page layout structure ,Mining web link structure	Te1 (Chapter 9)	WB, PPT, L
L34	Automatic classification of web documents and web usage mining	Te1 (Chapter 9)	WB, PPT, L
L35	Distributed Data Mining, Recent trends in Distributed Warehousing and Data Mining	Te3 (Chapter 9)	WB, PPT, L
L36*	Tutorial Association analysis	Te4	PS
L37*	Tutorial classification	Te1 ,Te3	PS
L38*	Tutorial clustering	Te1 , Te2	PS
L39*	Tutorial Sub graph mining	Te3	PS
L40*	Tutorial Time series data mining	Te1	PS