SEMESTER V

21CSA301	DATA WAREHOUSING AND DATA MINING	L-T-P-C: 3-1-0-4

Course Objectives

- This course will introduce the concepts of data warehouse and data mining, which gives a complete description about the principles, usage, architectures, applications, design and implementation of data mining and data warehousing concepts.

Course Outcomes

Cos	Description
CO1	Understand, describe and visualize the different types of data so as to apply data mining techniques.
CO2	Understand the concepts of a data warehouse and its operations.
CO3	Apply the frequent pattern mining algorithms for extracting associations from transaction data.
CO4	Develop skill in selecting the appropriate classification algorithm for solving practical problems.
CO5	Understand the concepts, methods and applications of cluster analysis.

CO-PO Mapping

PO/PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3
CO1	3	2	1	-	-	-	-	-	2
CO2	3	-	2	-	-	-	1	-	-
CO3	3	2	2	-	-	-	1	1	1
CO4	3	2	2	-	-	-	1	1	1
CO5	3	2	2	-	-	-	1	1	1
CAM	3	2	2	-	-	-	1	1	1

Syllabus

Unit 1

Introduction to Data Mining concepts – Different types of data for mining: database data, transaction data and other kinds of data- Different types of Patterns for mining techniques- Major issues in Data mining- Data objects and attributes types- Statistical description of data- Data visualization technique.

Unit 2

Introduction to Data warehousing concepts- Data warehouse basic concepts- Data warehouse Modeling- Data warehouse design and usage - Data warehouse implementation. Data generalization by attribute-oriented induction.

Unit 3

Frequent Patterns mining basic concepts- Apriori algorithm- Generating Association Rules from Frequent Itemsets - Improving the Efficiency of Apriori.

Unit 4

Classification basic concepts and general approaches- Decision tree induction – Bayes classification methods –

Rule Based classification.

Unit 5

Clustering analysis basic concepts- Overview of clustering – major clustering method - partitioning methods: K-means & k-medoids.

Textbooks / References:

1. Jaiwei Han, Micheline Kamber and Jian Pei, ”Data mining concepts and techniques “, Third edition, Elsevier publisher , 2006
2. K P Soman, Shyam Diwakar and V. Ajay.” Insight into data mining theory and practice”, Prentice hall of India , 2006.
3. Yanchang Zhao, “R and Data Mining”, Elsevier, 2013