CS304: Data Warehousing and Data Mining	L	T	P	Database Management System
	3	0	2	

Course Objective: To introduce the concept of Data Warehousing and Data Mining, respective techniques and applications in real world scenario.

S. No.	Course Outcomes (CO)
CO1	Understand the concepts and architecture of data warehousing, including OLAP and web integration.
CO2	Comprehend the principles of data mining, its query languages, and system architectures.
CO3	Apply association rule mining techniques to large transactional and relational databases.
CO4	Utilize classification and prediction models to analyze and predict data patterns effectively.
CO5	Implement clustering methods and mine complex data types like spatial, multimedia, and time-series data.

S. No	Contents	Contact Hours
UNIT 1	Data Warehousing: - Basic concepts in data warehousing, Collecting the requirements of data warehouse, Data Warehouse Architecture, Design, Implementation & Maintenance, OLAP in data warehouse, Data warehousing and the web, Data Cube Technology, From Data Warehousing to Data Mining.	8
UNIT 2	Data Mining Concepts: Data mining primitives, Basics of data mining, Query language, Architectures of data mining systems.	6
UNIT 3	Mining Association Rules in Large Databases: Association Rule Mining, Mining Single Dimensional Boolean Association Rules from Transactional Databases, Mining Multilevel Association Rules from Transaction Databases, Mining Multidimensional Association Rules from Relational Databases and Data Warehouses, From Association Mining to Correlation Analysis, Constraint Based Association Mining.	8
UNIT 4	Classification and Prediction: Issues Regarding Classification and Prediction, Classification by Decision Tree Induction, Bayesian Classification, Classification by Back propagation, Classification Based on Concepts from Association Rule Mining, Other Classification Methods, Prediction, Classifier Accuracy.	8
UNIT 5	Cluster Analysis in Data Mining: Types of Data in Cluster Analysis. A Categorization of Major Clustering Methods, Partitioning Methods, Density Based Methods, Grid Based Methods; Model Based Clustering Methods, Outlier Analysis	6
UNIT 6	Mining Complex Types of Data: Multidimensional Analysis and Descriptive Mining of Complex Data Objects, Mining Spatial Databases, Mining Multimedia Databases, Mining Time Series and Sequence Data, Mining Text Databases. Applications and trends in Data Mining: Applications, Systems products and research prototypes, Additional themes in data mining, Trends in Data mining, spatial mining, and Web Mining.	6
	Total	**42**