18CSPE607	DATA MINING AND WAREHOUSING	L	T	P	C
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Course Objectives:

1.	To know the fundamentals of data mining
2.	Be familiar with the concepts of data warehouse
3.	To understand the importance of association rule mining
4.	To understand the techniques of classification and clustering .
5.	Be aware about the recent trends of data mining

UNIT I	DATA MINING	9	+	0

Introduction – Data – Types of Data – Data Mining Functionalities – Interestingness of Patterns – Classification of Data Mining Systems – Data Mining Task Primitives – Integration of a Data Mining System with a Data Warehouse – Issues –Data Preprocessing.

UNIT II	DATA WAREHOUSING	9	+	0

Basic concepts – Data Cube – Multidimensional Data Model – Data Warehouse Architecture -– Data warehouse implementation – From Data Warehousing to Data Mining.

UNIT III	ASSOCIATION RULE MINING AND CLASSIFICATION	9	+	0

Mining Frequent Patterns, Associations and Correlations – Mining Methods – Mining various Kinds of Association Rules – Correlation Analysis – Constraint Based Association Mining. Classification and Prediction, Issues, Decision Tree Induction, Bayesian Classification, Rule Based Classification, Classification by Backpropagation – Support Vector Machines - Other Classification Methods.

UNIT IV	CLUSTERING AND OUTLIER ANALYSIS	9	+	0

Cluster Analysis - Types of Data – Categorization of Major Clustering Methods – K-means– Partitioning Methods – Hierarchical Methods - Density-Based Methods – Grid Based Methods – Model-Based Clustering Methods – Clustering High Dimensional Data – Constraint-Based Cluster Analysis – Outlier Analysis.

UNIT V	DATA MINING TRENDS	9	+	0

Multidimensional Analysis and Descriptive Mining of Complex Data Objects, Spatial Databases, Multimedia Databases, Time Series and Sequence Data, Text Databases, World Wide Web, Applications and Trends in Data Mining.Case studies involving classification and clustering.

Total (L+T)= 45 Periods

Course Outcomes:		
Upon completion of this course, the students will be able to:		
CO1	:	Discuss the fundamentals of data mining and preprocessing.
CO2	:	Explain the basic concept of data warehousing and multidimensional model.
CO3	:	Develop association rule mining and classification algorithms.
CO4	:	Apply different clustering and outlier detection techniques.
CO5	:	Have an overview about the applications and recent trends in Data Mining.

Text Books:	
1.	Jiawei Han, Micheline Kamber, "Data Mining: Concepts and Techniques", Morgan Kaufmann, Third Edition, 2011.

Reference Books:	
1.	G. K. Gupta, "Introduction to Data Mining with Case Studies", Easter Economy Edition, Prentice Hall of India, Third Edition, 2014.
2	David Hand, Heikki Manila, Padhraic Symth, "Principles of Data Mining", PHI 2012.
3.	W.H.Inmon, "Building the Data Warehouse", Third Edition, Wiley, 2011.