

## ELECTIVE – V

### 2CSE60E15: Data Warehousing & Data Mining

[3 0 2 3 1]

#### Learning Outcomes:

Upon Completion of the course, the students will be able to

- Store voluminous data for online processing
- Preprocess the data for mining applications
- Apply the association rules for mining the data
- Design and deploy appropriate classification techniques
- Cluster the high dimensional data for better organization of the data
- Discover the knowledge imbedded in the high dimensional system
- Evolve Multidimensional Intelligent model from typical system
- Evaluate various mining techniques on complex data objects

#### SYLLABUS

Unit No.	Topics	Lectures (Hours)
1	<b>Introduction</b> Introduction to Data Mining, Importance of Data Mining, Data Mining functionalities, Classification of Data mining systems, Data mining architecture, Major Issues in Data Mining, Data mining metrics, Applications of Data Mining, Social impacts of data, Data Mining from a Database Perspective	6
2	<b>Data Pre-processing</b> Introduction, Descriptive Data Summarization, Data Cleaning, Data Integration and Transformation, Data Reduction, Data Discretization.	7
3	<b>Classification and Prediction</b> Basic issues regarding classification and predication, Classification by Decision Tree, Bayesian classification, classification by back propagation, Associative classification, Prediction, Statistical-Based Algorithms, Decision Tree -Based Algorithms, Neural Network -Based Algorithms, Rule-Based Algorithms, Other Classification Methods, Combining Techniques, Classifier Accuracy and Error Measures	9
4	<b>Clustering</b> Similarity and Distance Measures, Hierarchical Algorithms, Partitioned Algorithms, Clustering Large Databases, Clustering with Categorical Attributes	8
5	<b>Association Rules</b> Basic Algorithms, Advanced Association Rule Techniques, Measuring the Quality of Rules	8

<b>6</b>	<b>Applications and other Data mining techniques</b>	<b>7</b>
	Data Mining Applications, Mining Event Sequences, Visual DM, Text Mining, Web Mining, The WEKA data mining Workbench	

**Text Books:**

1. J. Han and M. Kamber, "Data Mining: Concepts and Techniques", Morgan Kaufman, 3/E, 2011.
2. Alex Berson, Stephen J. Smith, "Data Warehousing, Data Mining, and OLAP", MGH, 1998.