

Data Warehousing and Data Mining

Course Code	18CS554	Credits	3
Course type	PE	CIE Marks	50 marks
Hours/week: L-T-P	3 – 0 – 0	SEE Marks	50 marks
Total Hours	40	SEE Duration	3 Hours for 100 marks

Course learning objectives

1. To introduce the fundamental concepts of data mining and Recognize various types of data mining tasks.
2. To introduce mathematical and statistical models used in data Classification.
3. To define, understand and interpret association rules.
4. Discuss the clustering algorithms to solve real-world problems

Pre-requisites : Data Base Management Systems, Design and Analysis of Algorithms

Unit – I

8 Hours

Data Mining: Introduction, What is Data Mining?, Data Mining – on what kind of Data? Data Mining Functionalities-What kinds of patterns can be mined?, Classification of Data mining systems, Major issues in Data Mining.

Unit – II

8 Hours

Data Warehouse and OLAP Technology: What is Data Warehouse? A multidimensional Data model, Data Warehouse architecture. From data warehouse to Data mining.

Self-learning topics: Weka tool

Unit – III

8 Hours

Data Pre-Processing: Why preprocess the data? Data Cleaning, Data Integration and transformation, Data reduction.

Self-learning topics: Weka tool

Unit – IV

8 Hours

Classification and Prediction: What is Classification and Prediction? Issues regarding classification and prediction. Classification by Decision Tree Induction. Bayesian Classification. Backpropagation.

Self learning topics: Weka tool for Analysis

Unit – V

8 Hours

Cluster Analysis: What is cluster Analysis? Types of data in cluster analysis, Categorization of major clustering methods. Partitioning methods.

Books

Text Books:

1. Jiawei Han, Micheline Kamber, Jian Pei: Data Mining - Concepts and Techniques, 3rd Edition, Morgan Kaufmann Publishers, 2011.

Reference Books:

1. Pang-Ning Tan, Michael Steinbach, Vipin Kumar: Introduction to Data Mining, Addison-Wesley, 2007.
2. G. K. Gupta: Introduction to Data Mining with Case Studies, 3rd Edition, PHI, New Delhi, 2014.