Course code	Course title	L	T	P	J	C
	Data Warehousing and Data Mining	3	0	0	0	3
Pre-requisite	**None**			**Syllabus version**		

Course Objectives:

- The aim of this course is to impart knowledge on data warehousing and Data Mining

Expected Course Outcome:

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

- Pre-process the data for mining
- Design and deploy appropriate classification techniques
- Discover the knowledge imbibed in the high dimensional system

Student Learning Outcomes (SLO):	**2.7.17**

Unit :1	**Basics of Data Warehousing**	**9 hours**	**SLO: 2,7**

Data warehouse – distinction between operation database systems and data warehouses – multi-tiered architecture – data mart – role of concept hierarchies – OLAP operations

Unit :2	**Online Analytical Processing**	**9 hours**	**SLO: 2,7**

Introduction – OLTP vs. OLAP systems – Data Modeling: Star Schema for Multidimensional View - Snow Flake Schema for Multidimensional View

Unit :3	**Introduction to Data Mining and Data Pre-processing**	**9 hours**	**SLO: 2**

Data Mining – Stages of the Data Mining Process -Technologies – Major Issues in Data Mining - Data cleaning - Data Integration - Data Transformation Data reduction

Unit: 4	**Mining frequent patterns**	**9 hours**	**SLO: 2,17**

Association rule mining- Market basket analysis – Apriori algorithm – Pattern-growth approach for mining frequent itemsets – Generating Association Rules - Association Analysis to Correlation Analysis

Unit: 5	**Classification and Clustering**	**9 hours**	**SLO: 2,17**

Basic concepts – Bayesian Classification Methods – K Nearest Neighbors – Rule based Classification - Basic concepts of clustering - K-means, Hierarchical methods: distance-based agglomerative and divisible clustering

	Total Lecture hours:	**45 hours**	

Text Book(s)

1. Han, Jiawei, Jian Pei, and Micheline Kamber. "Data mining: concepts and techniques", 2012, Elsevier.

Reference Books			
1.	Reema Thareja, “Data Warehousing”, 2009,Oxford University Press		
2.	Sam Anahory, “Data Warehousing in the real world: A Practical Guide for Building Decision Support Systems”, 2008, Pearson, First edition		
3.	Galit Shmueli, Peter C. Bruce, Nitin R. Patel, “Data Mining for Business Analytics: Concepts, Techniques, and Applications in XLMiner”, 2015, 3rd Edition, Wiley India Publications.		
4.	G. K. Gupta, Introduction to Data Mining with Case Studies, 2014, Easter Economy Edition, Prentice Hall of India.		
Mode of Evaluation: Digital Assignments / Quizzes /Term End Examination			
Recommended by Board of Studies	07-12-2018		
Approved by Academic Council	No. 53	Date	13-12-2018