SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc – Information Technology (Integrated)
Semester: IX
Syllabus with Effect from: June-2016

Paper Code: PS09CIIT02	Total Credit: 4
Title Of Paper: Data Warehouse and Data Mining	

Unit	Description in Detail	Weightage (%)
I	**Overview, concepts and techniques in Data Warehousing** What is data warehousing - The building Blocks Defining Features – Data warehouses and data marts Overview of the components Metadata in the data warehouse Need for data warehousing Basic elements of data warehousing Trends in data warehousing. OLAP (Online analytical processing) definitions Dimensional analysis - What are hypercubes? Drill-down and roll-up, slice and dice and rotation OLAP models ROLAP versus MOLAP Defining schemas: Star schemas, snowflake schemas	25%
II	**Introduction to Data Mining(DM), Data Processing** DM Functionalities Classification of DM Systems Issues in DM – KDD Process Why to preprocess data? Data cleaning: Missing Values, Noisy Data Data Integration and transformation Data Reduction: Data cube aggregation Dimensionality reduction Data Compression Numerosity Reduction Data Mining Primitives Kind of Knowledge to be mined Discretization and Concept Hierarchy	25%
III	**Mining Frequent patterns, Associations and correlations** Basic Concept Frequent Itemset Mining Methods Which patterns are interesting? – Pattern evaluation methods Pattern mining : A road map Pattern mining in multilevel, multidimensional space	25%
IV	**Classification and Prediction** Introduction to classification and prediction Issues regarding Classification Classification using Decision trees Bayesian Classification Classification by Back propagation Prediction Classification Accuracy	25%

Basic Text & Reference Books:-

- J. Han, M. Kamber, "Data Mining Concepts and Techniques", 3rd Edition , Morgan Kaufmann,2011.
- Paulraj Ponnian, "Data Warehousing Fundamentals", John Willey, 2nd Edition,2010.
- M. Kantardzic, "Data mining: Concepts, models, methods and algorithms", John Wiley &Sons Inc,2011.
- M. Dunham, "Data Mining: Introductory and Advanced Topics", Pearson Education,2006.
- Pieter Adriaans, Dolf Zantinge , "Data Mining", Pearson Education Asia,2006.