

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Semester: II

M.E. Information Technology

Subject Name: **Data warehouse and data mining (Major Elective – II)**

Sr.No	Course content
1.	Introduction Data warehousing – definitions and characteristics, Multi-dimensional data model, Warehouse schema.
2.	Data Marts Data marts, types of data marts, loading a data mart, metadata, data model, maintenance, nature of data, software components; external data, reference data, performance issues, monitoring requirements and security in a data mart.
3.	Online Analytical Processing OLTP and OLAP systems, Data Modeling, LAP tools, State of the market, Arbor Essbase web, Micro strategy DSS web, Brio Technology, star schema for multi dimensional view, snowflake schema; OLAP tools.
4.	Developing a Data Warehousing Building of a Data Warehousing, Architectural strategies & organizational issues, design considerations, data content, distribution of data, Tools for Data Warehousing
5.	Data Mining Definitions; KDD (Knowledge Discovery database) versus Data Mining; DBMS versus Data Mining, Data Mining Techniques; Issues and challenges; Applications of Data Warehousing & Data mining in Government.
6.	Association Rules A priori algorithm, Partition algorithm, Dynamic inset counting algorithm, FP – tree growth algorithm; generalized association rule.
7.	Clustering Techniques Clustering paradigm, Partition algorithms, CLARA, CLARANS; Hierarchical clustering, DBSCAN, BIRCH, CURE; Categorical clustering, STIRR, ROCK, CACTUS.
8.	Decision Trees Tree construction principle, Best split, Splitting indices, Splitting criteria, Decision tree construction with presorting.

9.	Web Mining Web content Mining, Web structure Mining, Web usage Mining, Text Mining.
10.	Temporal and Spatial Data Mining Basic concepts of temporal data Mining, The GSP algorithm, SPADE, SPIRIT, WUM.

Reference Books:

1. Data Mining, Han & Kamber, Morgan Kaufman
2. Data Warehousing –Concepts, Techniques, products, application; Prabhu; PHI.
3. Data Mining Techniques; A. K. Pujari; Universities Press.
4. Data Warehousing, Data Mining and OLAP; Alex Berson and Stephen J Smith; TMH.
5. Data Warehousing in the real world; Anahory; Pearson Education.
6. Data Mining Introductory & Advanced Topic; Dunham; Pearson Education