Data Warehousing and Mining

UNIT - I

Data Warehouse fundamentals: The Data Warehouse – Introduction, characteristics, its competitive advantages (05), Operational Database Systems and Data Warehouse (OLTP & OLAP) (05). Multidimensional Data Models: Types of Data, from Tables and Spreadsheets to Data Cubes (05).
Lectures: 15

UNIT - II

Principles of dimensional modeling: Identifying Facts and Dimensions, Designing Fact Tables, Designing Dimension Table, Data Warehouse Schemas, OLAP Operations, Data Extraction, Cleanup & Transformation, Star, snowflake and galaxy schemas for multidimensional databases (08). Architecture for a warehouse, Steps for construction of Data Warehouses, Data Marts, Metadata. Different OLAP operations, OLAP Server: ROLAP, MOLAP and HOLAP (07).
Lectures: 15

UNIT - III

Data Mining and its Functionalities: From Data warehousing to data mining, Motivation, Knowledge Discovery Process, objectives of Data Mining, the business context for DM, Process improvement, marketing and CRM (10). Tools of Data Mining. Data preparation, Data Mining Techniques: Statistical techniques, Characterization and discrimination, Association and market basket analysis, Classification and Prediction, Cluster analysis, Outlier analysis (10).
Lectures: 20

UNIT - IV

Data Mining Applications: Text Mining, Spatial Databases, Web Mining. Case studies in building business environment (05). Applications in telecommunications industry, retail, target marketing, fraud protection, health care, science, ecommerce, banking and finance (05).
Lectures: 10