

NAME OF THE SUBJECT	L	T	P	C
DATABASE MANAGEMENT SYSTEM	3	0	1	4
UNIT:1 (15 Hours) Introduction to database Systems, advantages of database system over traditional file system, Basic concepts & Definitions, Database users, Database Language, Database System Architecture, Schemas, Sub Schemas, & Instances, database constraints, 3-level database architecture, Data Abstraction, Data Independence, Mappings, Structure, Components & functions of DBMS, Data models.				
UNIT:2 (13 Hours) Entity relationship model, Components of ER model, Mapping E-R model to Relational schema, Relational Algebra, Tuple & Domain Relational Calculus, Relational Query Languages: SQL and QBE. Database Design:-Database development life cycle (DDLC), Automated design tools, Functional dependency and Decomposition, Join strategies, Dependency Preservation & lossless Design, Normalization, Normal forms: 1NF, 2NF, 3NF, and BCNF, Multi-valued Dependencies, 4NF & 5NF. Query processing and optimization: Evaluation of Relational Algebra Expressions, Query optimization, Query cost estimation.				
UNIT:3 (10 Hours) Network and Object Oriented Data models, Storage Strategies: Detailed Storage Architecture, Storing Data, Magnetic Disk, RAID, Other Disks, Magnetic Tape, Storage Access, File & Record Organization, File Organizations & Indexes, Order Indices, B+ Tree Index Files, Hashing Data Dictionary.				
UNIT:4 (12 Hours) Transaction processing and concurrency control: Transaction concepts, properties of transaction, concurrency control, locking and Timestamp methods for concurrency control schemes. Database Recovery System, Types of Data Base failure & Types of Database Recovery, Recovery techniques, fundamental concepts on Object-Oriented Database, Object relational database, distributed database, Parallel Database, introduction to Data warehousing & Data Mining.				
Text Books: 1. Sudarshan, Korth: Database System Concepts, 6th edition, McGraw-Hill Education 2. Elmasari&Navathe: Fundamentals of Database System, Pearson Education.				
Reference Books: 1. Elmasari&Navathe: Fundamentals of Database System, Pearson Education. 2. Ramakrishnan: Database Management Systems, McGraw-Hill Education. 3. Andrew S. Tanenbaum: Modern Operating Systems, 3rd Edition, Pearson Education. 4. Terry Dawson, Olaf Kirch: Linux Network Administrator's Guide, 3rd Edition O'Reilly				