

**Shastri II Year-III Semester**

**GENERIC COURSE 3 (GE-3)**

**Course Name: – DATABASE MANAGEMENT SYSTEM**

**Introduction:** Data plays a vital role nowadays. Abundant data availability leads to the need for data handling and acquiring meaningful information from available data as per requirement is necessary. DBMS helps to understand the management of databases relating to different applications.

**Objective:** To teach database and relational Database to manage the data and to develop basic tables and write queries to fetch the required data. The application of the DBMS concepts will be done through SQL languages.

**Learning Outcomes:** Learner able to understand the basic concepts of database, relational database, data models, SQL commands, and SQL server.

**Theory** : 60Marks

**Internal Assessment** : 40 Marks

| unit     | Content   | Hours | Credits |
|----------|---|-------|---------|
| Unit - 1 | <b>Database System Concept &amp; Data Modeling:</b> Basic Concepts, Advantages of a DBMS over file processing system, Data Independence, Components of a DBMS. Three views of Data (External View, Conceptual View, Internal View), Three level architecture of DBMS. Introduction to RDBMS.  | 15    | 01      |
| Unit - 2 | <b>Define data model, Data Models:</b> Network Model, Hierarchical Model, E-R Model<br><b>ER Model:</b> Entity sets and relationship sets- Attributes - Keys in entity and relationship sets: (a) Super Key (b) Candidate Key (c) Primary Key (e) Unique Key - Mapping constraints, Participation Constraint, E-R diagram, Notations. Strong Entity Set and Weak Entity Set | 15    | 01      |
| Unit - 3 | <b>Relation Model:</b> Advantages, Disadvantages, Codd's 12 rules, Definition of Relations, Schema, Sub schema. Relational Model Constraints (Domain, Tuple Uniqueness, Key Constraints, Integrity Constraints, Entity Constraints).  | 15    | 01      |
| Unit - 4 | <b>SQL:</b> SQL Introduction, Data definition language, Data manipulation language,<br><b>SQL Command:</b> DESCRIBE, SELECT, WHERE CLAUSE, DISTINCT CLAUSE, ORDER BY, HAVING, LOGICAL OPERATIONS, SQL OPERATORS, JOIN, Aggregate functions, String functions and date time functions, Null values.  | 15    | 01      |

**Reference Text Books:**

1. Database System Concepts - A. Silberschatz, S. Sudarshan & H. F. Korth
2. Fundamental of Database System - R. Elmasri & S. B. Navathe-books