DSCE
Dept. of Information Science & Engg

DAYANANDA SAGAR COLLEGE OF ENGINEERING

(An Autonomous Institute Affiliated to VTU, Belagavi) Approved by AICTE & ISO 9001:2008 Certified)
Accredited by National Assessment & Accreditation Council (NAAC) with 'A' grade
Shavige Malleshwara Hills, Kumaraswamy Layout, Bengaluru-560078

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

SCHEME 2018

Unit.	Content of the Unit	Hours	COs
1.	**Introduction:** Introduction ; An example; Characteristics of Database approach; Advantages of using DBMS approach; When not to use DBMS; Data models, schemas and instances; Three schema architecture and data independence; Database System environment. **Entity-Relationship model**: A sample Database Application; Entity types, Entity Sets, Attributes and Keys; Relationship types, Relationship Sets, Roles and structural Constraints; Weak Entity types; ER Diagrams, Naming Conventions and Design issues.	10	CO1, CO2, CO6
2.	**Relational Model:** Relational Model Concepts; Relational Model constraints and Relational Database Schemas; update operations, Transactions and dealing with constraint violations. **Relational Algebra**: Unary Relational Operations: SELECT and PROJECT; Relational Algebra Operations from Set Theory; Binary Relational Operations: JOIN and DIVISION; Additional Relational Operations. Relational Database Design Using ER-to-Relational mapping.	10	CO1, CO2
3.	**SQL:** Overview; The Form of a Basic SQL Query; Union, Intersect and Except; Nested Queries; Aggregate Operators; Null Values	10	CO4
4.	**SQL**: Complex Integrity Constraints in SQL; Triggers and active Databases; Accessing Databases from Applications; Stored Procedures. **Database Design:** Informal Design Guidelines for Relation Schemas; Functional Dependencies; Normal Forms Based on Primary Keys	10	CO4, CO5, CO6
5.	**Database Design:** General Definitions of Second and Third Normal Forms; Boyce-Codd Normal form. **Transaction Management**: The ACID properties; Transactions and Schedules; Concurrent Execution of Transactions; Lock Based Concurrency Control; Transaction Support in SQL	10	CO3, CO5, CO6