CS807   **DATABASE MANAGEMENT SYSTEMS**   **3-1-0-4**

Introduction to Databases – Traditional File based Systems – Database Approach – DBMS Components – Roles. Database Environment – Architecture – Schemas, Mapping and Instances – Database Languages – Data Models – Conceptual Modeling – Relational Model – Basics – Integrity Constraints – Views. SQL – Introduction – Commands – Data Manipulation – SQL Data Definition – Views – Transactions – Advanced SQL - SQL Programming Language. Entity Relationship Modeling – Entity Types – Relationship Types – Attributes – Constraints.

Object Relational Databases – Advanced Database Applications – Object Relational Modeling - SQL 2011 - PostgreSQL. Semistructured, Unstructured and Structured Data - Semistructured Data and XML - XML document – Structure of XML Data – XML Document Schema – Querying and Transformation – API – Storage of XML Data – XML Applications.

Document oriented Databases – Background of NoSQL – NoSQL Query Processing – MongoDB. Application of Databases – Digital Libraries.

TEXTBOOKS/REFERENCES:

1. Thomas Connolly and Carolyn Begg, "Database Systems: A Practical Approach to Design, Implementation, and Management, 6th Edition" , Pearson, 2015
2. Silberschatz A, Korth H F and Sudharshan S, "Database System Concepts", Sixth Edition, Tata McGraw-Hill Publishing Company Limited, 2010.
3. Hector Garcia-Molina, Jeff Ullman and Jennifer Widom, "Database Systems: The Complete Book", Pearson, 2011.
4. Niall O'Higgins, "MongoDB and Python", O'reilly, 2011.