ST.JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

V SEMESTER **COMPUTER SCIENCE** Time: 3 Hrs/Week

C 5601/CS 5901 (3) **DATABASE MANAGEMENT SYSTEMS** Max. Marks: 100

w.e.f. 2015 – 2018 ("15AC") **SYLLABUS**

OBJECTIVES: To enable the students to

To get an overview of Database Management Concepts.

To know the rules for designing and working with a database.

To work with SQL and PL/SQL

UNIT - I: Database Systems Introduction and Fundamentals.

Database Systems: Introducing the database and DBMS, Why the database is important, Historical **Roots:** Files and File Systems, Problems with File System Data Management, Database Systems, DBMS architecture.

Data Models: The importance of Data models, Data Model basic building blocks, Business Rules, The evaluation of Data Models, levels of Data Abstraction.

UNIT - II: **Data Modelling**

Relational Database Model: A logical view of Data, Keys, Integrity Rules, Relational Set operators, the Data Dictionary and the system catalogue, Relationships within the Relational Database, Indexes, Codd's relational database rules.

Entity Relationship Model: The ER Model, Developing ER Diagram, Database Design **Challenges:** Conflicting Goals.

UNIT - III: **Normalization & SQL**

Normalization of database tables: Database Tables and Normalization, The need for Normalization, The Normalization Process, Improving the design, Surrogate key Considerations, High level Normal Forms, Normalization and database design, de-normalization.

Introduction to SQL: Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual tables, Joining Database Tables.

UNIT - IV: Advanced SQL & Procedural SQL

Advanced SQL: Relational Set Operators, SQL Join Operators, Sub-queries,SQL Functions, Oracle Sequences, Updatable Views,

PLSQL: programming statements, triggers, cursors, stored procedures, stored functions.

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UNIT - V: Transaction management, Database Administration, Distributed Databases

Transaction properties, transaction management with SQL, transaction log

Concurrency control: Lost updates, uncommitted data, inconsistent retrievals.

Database Administration: The evolution of database administration function, database administrator roles and responsibilities, database security.

Distributed Database Management Systems: The evolution of distributed Database Management Systems, DDBMS advantages and Disadvantages, Distribution Processing and Distribution Databases, Characteristics of distributed Database management systems.

PRESCRIBED TEXT BOOK:

Database Systems Design, Implementation and Management by Peter Rob, Carlos Coronel, 7th Edition Cengage Learning.

CHAPTER: 1. 2, 3, 4, 5, 7, 8, 10.2, 11.1.2, 12.2, 12.3, 12.4, 15.4, 15.5, 15.6.

REFERENCE BOOKS:

1. Database management Systems by Raghuramakrishnan & Johannes Gehrke McGrahill.
2. Fundamentals of Database Systems by Elmasri / Navathe, Fifth Edition, Person Addison Wesley.
3. An Introduction to Database Systems by C.J.Date, A.Kannan, S. Swamynathan, Eight Edition, Person Education.
4. Database system Concepts by Avi Silberschatz, Henry F.Korth S. Sudarshan McGraw-Hill.

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V SEMESTER **COMPUTER SCIENCE** Time: 3 Hrs/Week

C 5651/CS 5951 (2) **D.B.M.S. LAB** Max. Marks: 50

w.e.f. 2015 – 2018 (“15AC”) **PRACTICAL – III A**

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