**CSE221: DBMS Lab]**

**Programme:** B.Tech (CSE) **Year:** Second **Semester:** Fourth

**Course:** Core **Credits:** 2 **Hours: 2** Hours/week

**Course Context and Overview:**

Database Management System lab is the fundamental laboratory course for Computer Science and Engineering branches. This course is designed for students who have prior experience with computer programming and Data Structures. This program of study is directed towards dealing with Data problem. The objective of the program is to enable students to implement the basics of SQL and solve Data problems in lab. It also provides the basic conceptual background necessary to design and develop relational database systems.

**Prerequisites Courses:**

CSE 215:Data Structures

**Course outcomes (COs):**

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| **On completion of this course, the students will have the ability to:** |
| CO1 – Understand the logical design principles of databases, including the E‐R model and normalization approach. |
| CO2 – Understand SQL and procedural interfaces to SQL comprehensively |
| CO3 – to motivate the participants to relate all these to one or more commercial product environments as they relate to the developer tasks |
| CO4 – Understand the basic working of database management aspects in terms of transaction processing, concurrency control, and recovery. |

**Course Topics**

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| **Contents** | **Lab sessions** |
| 1. E-R Modelling | 1 |
| 1. Creating a Database, table; Specifying Relational Data Types, Constraints | 1 |
| 1. Table and Record Handling: INSERT, SELECT, DELETE, UPDATE, TRUNCATE, DROP, ALTER | 1 |
| 1. Retrieving Data from a Database: SELECT, WHERE clause, LOGICAL OPERATORS in WHERE clause | 1 |
| 1. Retrieving Data from a Database: Using IN, BETWEEN, LIKE, | 1 |
| 1. Retrieving Data from a Database: Using ORDER BY, GROUP and HAVING | 1 |
| 1. Retrieving Data from a Database: Using: Aggregate Functions | 1 |
| 1. Retrieving Data from a Database: Combining Tables using JOINS; Subqueries | 1 |
| 1. Database Management: Creating Views, Aliases, Creating Database Users, GRANT, REVOKE | 1 |
| 1. Minor Project | 1 |

**Textbook references :**

**Text Book:**

* R. Elmasri and S. Navathe, *Fundamentals of Database Systems*, Addison-Wesley, 6th ed., 2011

**Reference books:**

* Silberschatz, H. Korth, and S. Sudarshan, *Database System Concepts*, McGraw-Hill.
* R. Ramakrishnan, *Database Management Systems*, WCB/McGraw-Hill.
* C.J. Date, An Introduction to *Database Systems*, Pearson, 8th ed.

**Additional Resources (NPTEL, MIT Video Lectures, Web resources etc.):**

* http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-830-database-systems-fall-2010/
* http://nptel.ac.in/courses/106106093/
* http://nptel.ac.in/courses/106106095/

**Evaluation Methods:**

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| **Item** | **Weightage** |
| Continuous Evaluation/Assignments | 20% |
| Midterm | 40% |
| End-term/ Minor Project | 40% |

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