**LESSON PLAN**

**Name:** Mr. Naresh Grover

**Discipline:** Computer Science and Engineering

# Semester: B.Tech 3rd

**Subject:** **DATABASE MANAGEMENT SYSTEMS** **(DBMS)(CSE-205N)**

**Lesson Plan Duration:** 15 weeks (from July, 2018 to Dec, 2018)

**Work Load:** Lectures-03, Practical -03

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| **Week** |  | **Theory** |
|  | **Lecture Day** | **Topic** |
| **1st** | 1 | Concept & Overview of DBMS |
| 2 | Data Models |
| 3 | Database Languages, Database Administrator |
| **2nd** | 4 | Database Users |
| 5 | Three Schema architecture of DBMS |
| 6 | Basic concepts, Design Issues, Mapping Constraints of E-R model |
| **3rd** | 7 | Keys, Entity-Relationship Diagram, Weak Entity Sets |
| 8 | Extended E-R features |
| 9 | **Revision of Unit-I** |
| **4th** | 10 | Structure of relational Databases |
| 11 | Relational Algebra |
| 12 | Relational Calculus |
| **5th** | 13 | introduction to Views, updates on views |
| 14 | Concept of DDL, DML, DCL |
| 15 | Basic Structure, Set operations |
| **6th** | 16 | Aggregate Functions, Null Values, Domain Constraints |
| 17 | Referential Integrity Constraints, assertions, views |
| 18 | Nested Sub queries |
| **7th** | 19 | Database security application development using SQL |
| 20 | Stored procedures and triggers |
| 21 | **Revision of Unit-II** |
| **8th** | 22 | Functional Dependencies |
| 23 | Different anomalies in designing a Database |
| 24 |
| **9th** | 25 | Normalization using functional dependencies, |
| 26 |
| 27 | Decomposition, Boyce-Codd Normal Form, 3NF |
| **10th** | 28 | Decomposition, Boyce-Codd Normal Form, 3NF |
|  | 29 | Normalization using multi-valued dependencies, 4NF, 5NF |
| 30 |
| **11th** | 31 | Physical data structures, Query optimization: join algorithm |
| 32 | Statistics and Cost based Optimization |
| 33 | Overview of Transaction processing , Concurrency control, Recovery Management |
| **12th** | 34 | Transaction model properties, state serializability, lock base protocols, Two phase locking. |
| 35 | **Revision of Unit-III** |
| 36 | Issues and Models for Resilient Operation -Undo/Redo Logging |
| **13th** | 37 | Protecting against Media Failures |
| 38 | Serial and Serializable Schedules |
| 39 | Conflict Serializability |
| **14th** | 40 | Enforcing Serializability by Locks |
| 41 | Locking Systems with Several Lock Modes-Concurrency Control by Timestamps, validation. |
| 42 | Serializability and Recoverability-View |
| **15th** | 43 | Serializability-Resolving |
| 44 | Deadlocks-Distributed Databases: Commit and Lock |
| 45 | **Revision of Unit-IV** |

# Text Books:

1. [Ramez Elmasri ,](http://www.flipkart.com/author/ramez-elmasri) [Shamkant B. Navathe ,](http://www.flipkart.com/author/shamkant-b-navathe)”Fundamentals of Database systems”, Pearson

2. Korth, Silberschatz, Sudarshan: Database Concepts, MGH,

**Reference Books:**

1. R. Ramakrishnan and J. Gehrks Database Management System; MGH, International Edition,
2. C. J. Date, Data base Systems: 7th edition, Addison Wesley, Pearson Education
3. Rini Chakrabarti, Advance Database Management Systems , Wiley Dreamtech

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|  | | **Practical** | |
| **Week** | **Practical Day** | **Topic** | |
| 1 | 1 | * Write the queries for [Data Definition Language (DDL) in RDBMS.](http://enggedu.com/data_definition_language_DDL_commands_in_RDBMS/index.php) * Write the queries for Data Manipulation Language (DML) in RDBMS | |
| 2 | 2 | * Write the queries for Data Control Language (DCL) in RDBMS * Write SQL queries using logical operations (=,,etc) | |
| 3 | 3 | * Write SQL queries using SQL operators * Using two tables create a view which shall perform equi join and also create various views * Using two tables create a view showing non equi join | |
| 4 | 4 | Write SQL query using character, number, date and group functions | |
| 5 | 5 | Write SQL queries for relational algebra | |
| 6 | 6 | Write SQL queries for extracting data from more than one table | |
| 7 | 7 | Write SQL queries for sub queries, nested queries | |
| 8 | 8 | Write SQL Queries to implement  ROLL BACK, COMMIT & CHECK POINTS | |
| 9 | 9 | * Create VIEWS, CURSORS and TR * Write SQL queries for equi-join and different view formation * Write SQL queries for non-equi join and view formation | |
| 10 | 10 | High level language extension with Cursors | |
| 11 | 11 | * High level language extension with Triggers. * To study the concept of Functions | |
| 12 | 12 |  | To study the concept of Procedures |
|  |  |  |  |
| 13 | 13 |  | Create a program to find area of a circle using a procedure and insert the values into a table |
| 14 | 14 |  | Revision |
| 15 | 15 |  | Viva |