**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
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| 2 | 2 | * Write the queries for Data Control Language (DCL) in RDBMS
* Write SQL queries using logical operations (=,,etc)

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| 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

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| 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
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| 10 | 10 |  High level language extension with Cursors  |
| 11 | 11 | * High level language extension with Triggers.
* To study the concept of Functions
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| 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  |