

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  
**CHHATTISGARH INSTITUTE OF TECHNOLOGY, JASHPUR (C.G.)**

**LESSON PLAN SESSION JAN – JUN 2025**

SUBJECT: **DATABASE MANAGEMENT SYSTEM**

SEMESTER: **4<sup>TH</sup>**

BRANCH: - **COMPUTER SCIENCE &**

**ENGINEERING**

| UNIT NUMBER  | NAME OF THE TOPIC  | NO OF CLASS REQUIRED | REMARK |
|--|--|----------------------|--------|
| <b>UNIT 01:</b><br><br><b>Overview of Database Management System</b> | 1.1 Need of Database system  | 01                   |        |
|  | 1.2 Advantages and Disadvantages of DBMS   |                      |        |
|  | 1.3 Levels of Data Abstraction<br>1.3.1 Logical level<br>1.3.2 Physical level<br>1.3.3 View level                              | 02                   |        |
|  | 1.4 Data independence  |                      |        |
|  | 1.5 An architecture of DBMS<br>1.5.1 Data base users<br>1.5.2 Roles of DBA   | 02                   |        |
|  | 1.6 Applications of DBMS   |                      |        |
|  | Doubt Class  | 01                   |        |
|  |  |                      |        |
| <b>Unit 02:</b><br><br><b>Data Models and ER Model</b>               | 2.1 Schema and Instances   | 01                   |        |
|  | 2.2 Types of data model<br>2.2.1 Relational data model<br>2.2.2 Network data model<br>2.2.3 Hierarchical data model            | 03                   |        |
|  |  |                      |        |
|  |  |                      |        |
|  | Doubt Class  | 01                   |        |
|  |  |                      |        |
| <b>Unit 03:</b><br><br><b>Query Language and Data Integrity</b>      | 3.1 Introduction to SQL  | 01                   |        |
|  | 3.2 SQL data types   | 01                   |        |
|  | 3.3 SQL commands<br>3.3.1 DDL commands<br>3.3.1 DML commands<br>3.3.1 TCL commands<br>3.3.1 DCL commands<br>3.3.1 DQL commands | 03                   |        |
|  | 3.4 SQL Operators  |                      |        |
|  |  |                      |        |
|  |  |                      |        |
|  | 3.5 Constraints<br>3.5.1 Primary key constraints<br>3.5.2 Foreign key constraints  | 02                   |        |
|  | Doubt Class  | 01                   |        |
|  |  |                      |        |
| <b>Unit 04:</b><br><br><b>SQL Functions</b>                          | 4.1 Group functions, Group by, having and order by clause  | 02                   |        |
|  | 4.2 Join operations<br>4.2.1 Inner Join<br>4.2.2 Outer Join  | 02                   |        |
|  |  |                      |        |
|  | 4.3 Nested Query<br>4.3.1 Correlated query<br>4.3.2 Uncorrelated query   | 01                   |        |
|  |  |                      |        |
|  | 4.4 Math functions   | 01                   |        |
|  | Doubt Class  | 01                   |        |

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| <b>Unit 05:</b>                | 5.1 Introduction to functional dependency<br>5.1.1 trivial and non-trivial dependencies<br>5.1.2 inference rules<br>5.1.3 closure of a set of dependencies | 03        |  |
| <b>Functional Dependencies</b> | 5.2 Closure of a set attributes  | 02        |  |
|                                | 5.3 Types of keys  | 01        |  |
|                                | 5.4 Normalization  | 02        |  |
|                                | 5.5 Normal forms   | 02        |  |
|                                | Doubt Class  | 01        |  |
|                                |  |           |  |
| <b>Total Class Required</b>    |  | <b>40</b> |  |

Lecturer Name & Sign: - MANISH DONGRE  
LECTURER, CSE, GPJ