

Government P G College, Ambala Cantt
Course File (Session 2023-24)
Name of Professor: Shalin Bhola
Class: BBA/3RD Semester
Subject code and Name: BBA-205: Fundamentals of DBMS and ORACLE

SYLLABUS

BBA-205: Fundamentals of DBMS and ORACLE

Max. Marks: 60

External Assessment: 50

Internal Assessment: 10

Note: There will be eight questions in all. A candidate is required to attempt five questions including the question no. 1 which is compulsory. Question no. 1 will comprise of five short answer questions. All questions shall carry equal marks.

Basic Concepts – Traditional file oriented approach, Disadvantages of simple file system, Database approach, Advantages of Database approach, Database Management Systems (DBMS), Components of DBMS Environment, Advantages and Disadvantages of DBMS, DBMS Architecture, Data Independence, Data Models, Keys. Computers: An introduction, use of computer in business, advantages and disadvantages, computerized system for inventory control, payroll order, banking and accounting. SQL using ORACLE: Introduction to SQL, Components of SQL: DDL, DML & DCL, Data types in SQL, DDL Commands: Create, Alter, Drop, Truncate. Creating queries with DDL commands and implementing constraints. DML Commands: Insert, Delete, Update, Select, Select with Group by and Order by. Creating queries with DML commands. Operators: Set and Logical, SQL functions: Numeric functions, Scalar functions and Group functions Report-Writing: Commands, advantages of Report writing.

Suggested Readings: 1. Fundamentals of Database Systems by Elmasri & Navathe (Pearson Education). 2. An Introduction to Database Systems by C. J. Date (Addison Wesley N. Delhi). 3. ORACLE 8I computer References by Tata Mc-Graw Hill. 4. SQL, PL/SQL- The programming language of Oracle by Ivan Bayross (BPB Publications). P

COURSE OBJECTIVES

The Course Objectives are given below

The course objectives for "Fundamentals of Database Management Systems (DBMS) and Oracle" typically aim to provide students with a comprehensive understanding of database concepts, principles, and the practical application of Oracle Database Management System. Here are some common objectives for such a course:

1. **Understanding Database Fundamentals:** Introduce students to the fundamental concepts of databases, including data models, database architectures, relational database principles, and the importance of data management in modern computing environments.
2. **Introduction to Oracle DBMS:** Familiarize students with Oracle Database Management System, one of the most widely used relational database management systems in the industry. This includes understanding its architecture, features, and functionalities.
3. **Relational Database Design:** Teach students the principles of designing a relational database, including entity-relationship modeling, normalization techniques, and data integrity constraints.
4. **SQL (Structured Query Language):** Provide hands-on experience in writing SQL queries to retrieve, manipulate, and manage data stored in an Oracle database. This includes basic to advanced SQL commands, such as SELECT, INSERT, UPDATE, DELETE, JOIN operations, subqueries, and aggregate functions.
5. **Database Administration:** Introduce students to the concepts of database administration, including user management, security, backup and recovery, performance tuning, and monitoring in the context of Oracle DBMS.
6. **Transaction Management and Concurrency Control:** Cover the principles of transaction management and concurrency control to ensure data consistency, isolation, and reliability in multi-user database environments.
7. **Data Warehousing and Business Intelligence:** Explore advanced topics such as data warehousing, data mining, and business intelligence concepts using Oracle tools and technologies.
8. **Integration with Other Technologies:** Illustrate how Oracle databases integrate with other technologies and platforms, such as web applications, mobile applications, and enterprise systems.

COURSE OUTCOMES

After the successful completion of the course, students will be able:

1. **Understanding Database Concepts:** Students should demonstrate a solid understanding of fundamental database concepts, including data models, relational database principles, and database architectures.
2. **Proficiency in Oracle DBMS:** Students should be proficient in using Oracle Database Management System, including knowledge of its architecture, features, and functionalities.
3. **Database Design Skills:** Students should be able to design and implement relational databases using appropriate design principles, normalization techniques, and data integrity constraints.
4. **SQL Proficiency:** Students should be able to write SQL queries to retrieve, manipulate, and manage data stored in an Oracle database. They should demonstrate proficiency in basic to advanced SQL commands and query optimization techniques.
5. **Database Administration Skills:** Students should be capable of performing basic database administration tasks, including user management, security configuration, backup and recovery procedures, and performance tuning in an Oracle environment.
6. **Transaction Management and Concurrency Control:** Students should understand the principles of transaction management and concurrency control and be able to implement them effectively to ensure data consistency and reliability in multi-user database environments.
7. **Integration Skills:** Students should understand how Oracle databases integrate with other technologies and platforms and be able to integrate Oracle databases with web applications, mobile applications, and enterprise systems.

LESSON PLAN

| Week No | Scheduled Dates | Topics to be covered |
|---------|--------------------------------------|---|
| 1 | July 24,2023- July27,2023 | Computers: An introduction, use of computer in business, advantages and disadvantages. |
| 2 | July 31,2023- Aug 03,2023 | computerized system for inventory control, payroll order |
| 3 | Aug7,2023- Aug 10,2023 | computerized system for banking and accounting |
| 4 | Aug14,2023- Aug 17,2023 | Database approach, Advantages of Database approach, |
| 5 | Aug21,2023- Aug 24,2023 | Database Management Systems (DBMS), |
| 6 | Aug 28,2023- Aug 31,2023 | Advantages and Disadvantages of DBMS, Test |
| 7 | Sept 04,2023- Sept 07,2023 | Components of DBMS Environment, DBMS Architecture, |
| 8 | Sept11,2023- Sept14,2023 | Data Independence, |
| 9 | Sept 18,2023- Sept 21,2023 | Data Models, Test |
| 10 | Sept25,2023- Sept28,2023 | Keys. |
| 11 | Oct02,2023- Oct04,2023 | SQL using ORACLE: Introduction to SQL, Components of SQL: DDL, DML & DCL |
| 12 | Oct9,2023- Oct12,2023 | Data types in SQL |
| 13 | Oct16,2023- Oct19,2023 | DDL Commands: Create, Alter, Drop, Truncate. Creating queries with DDL commands and implementing constraints. |
| 14 | Oct23,2023- Oct26,2023 | DML Commands: Insert, Delete, Update, Select, Select with Group by and Order by. Creating queries with DML commands |
| 15 | Oct 30, 2023- Nov02,2023 | Operators: Set and Logical, SQL functions: Numeric functions, Scalar functions and Group functions |
| 16 | Nov 6,2023- Nov9,2023 | Report-Writing: Commands, advantages of Report writing. |
| 17 | Nov20,2023- Nov23,2023 | Final Test, Assignments and REVISION of Contents, Previous Year Question Papers Discussion |

