

# ORACLE SYLLABUS

## Module 1: Introduction to Oracle

- What is Oracle Database
- Features of Oracle
- Oracle Architecture Overview
- Oracle vs MySQL
- Installing Oracle Database & SQL Developer

## Module 2: Database Fundamentals

- Tables, rows, columns
- Data types in Oracle
- Constraints (PRIMARY KEY, UNIQUE, NOT NULL, CHECK)
- Creating and managing tables

## Module 3: SQL Basics

- Introduction to SQL
- DDL (CREATE, ALTER, DROP)
- DML (INSERT, UPDATE, DELETE)
- DQL (SELECT)
- Filtering data (WHERE clause)

## Module 4: Advanced SQL Queries

- ORDER BY
- GROUP BY
- HAVING clause
- Aggregate functions (COUNT, SUM, AVG, MAX, MIN)

## **Module 5: Joins & Subqueries**

- INNER JOIN
- LEFT/RIGHT JOIN
- SELF JOIN
- Subqueries
- Correlated queries

## **Module 6: Views & Indexes**

- Creating views
- Updating views
- Indexes (types and usage)
- Performance benefits

## **Module 7: PL/SQL Programming**

- Introduction to PL/SQL
- Blocks and structure
- Variables and data types
- Control statements
- Loops and conditions

## **Module 8: Stored Procedures & Functions**

- Creating procedures
- Functions with parameters
- Exception handling
- Packages

## **Module 9: Triggers**

- What are triggers
- Types of triggers (BEFORE, AFTER)
- Row-level vs statement-level triggers

- Practical examples

## **Module 10: Transactions**

- ACID properties
- COMMIT, ROLLBACK
- SAVEPOINT
- Transaction management

## **Module 11: Security & User Management**

- Creating users
- Roles and privileges
- Granting and revoking permissions
- Database security

## **Module 12: Backup & Recovery**

- Backup strategies
- RMAN basics
- Data recovery techniques

## **Module 13: Performance Tuning**

- Query optimization
- Index tuning
- Execution plans
- Monitoring performance

## **Module 14: Database Administration (DBA Basics)**

- Managing database users
- Storage management
- Tablespaces
- Datafiles

## **Module 15: Oracle with Applications**

- Connecting Oracle with applications
- Using Oracle in web development
- CRUD operations

## **Module 16: Real-World Projects**

- Banking database system
- Inventory management system
- Student management system
- Enterprise database design