

**Course Description:** This course is your first step towards success as an Oracle professional, designed to give you a firm foundation in basic database administration. In this class, you'll learn how to install and maintain an Oracle database. You will gain a conceptual understanding of the Oracle database architecture and how its components work and interact with one another. You will also learn how to create an operational database and properly manage the various structures in an effective and efficient manner including performance monitoring, database security, user management, and backup/recovery techniques. The lesson topics are reinforced with structured hands-on practices. This course is designed to prepare you for the corresponding Oracle Certified Associate exam.

**Who Should Attend:** This course is for database administrators, sales consultants, support engineers, project managers, database designers, and technical consultants.

**Prerequisites:** Students should have a working knowledge of SQL.

**Benefits of Attendance:** Upon completion of this course, students will be able to:

- Install Oracle Database 10g and configure a database.
- Manage the Oracle instance.
- Manage the Database storage structures.
- Create and administer user accounts.
- Perform backup and recovery of a database.
- Monitor, troubleshoot, and maintain a database.
- Configure Oracle Net services.
- Move data between databases and files.

## Course Outline:

### Introduction (Database Architecture)

Describe course objectives  
Explore the Oracle 10g database architecture

### Installing the Oracle Database Software

Explain core DBA tasks and tools  
Plan an Oracle installation  
Use optimal flexible architecture  
Install software with the Oracle Universal Installer (OUI)

### Creating an Oracle Database

Create a database with the Database Configuration Assistant (DBCA)  
Create a database design template with the DBCA  
Generate database creation scripts with the DBCA

### Managing the Oracle Instance

Start and stop the Oracle database and components  
Use Enterprise Manager (EM)  
Access a database with SQL\*Plus and iSQL\*Plus  
Modify database initialization parameters  
Understand the stages of database startup  
View the Alert log  
Use the Data Dictionary

### Managing Database Storage Structures

Describe table data storage (in blocks)  
Define the purpose of tablespaces and data files  
Understand and utilize Oracle Managed Files (OMF)  
Create and manage tablespaces  
Obtain tablespace information  
Describe the main concepts and functionality of Automatic Storage Management (ASM)

### Administering User Security

Create and manage database user accounts  
Authenticate users  
Assign default storage areas (tablespaces)  
Grant and revoke privileges  
Create and manage roles  
Create and manage profiles  
Implement standard password security features  
Control resource usage by users

### Managing Schema Objects

Define schema objects and data types  
Create and modify tables  
Define constraints  
View the columns and contents of a table  
Create indexes, views and sequences  
Explain the use of temporary tables  
Use the Data Dictionary

### Managing Data and Concurrency

Manage data through SQL  
Identify and administer PL/SQL Objects  
Describe triggers and triggering events  
Monitor and resolve locking conflicts

### Managing Undo Data

Explain DML and undo data generation  
Monitor and administer undo  
Describe the difference between undo and redo data  
Configure undo retention  
Guarantee undo retention  
Use the undo advisor

### Implementing Oracle Database Security

Describe DBA responsibilities for security  
Apply the principal of least privilege  
Enable standard database auditing  
Specify audit options  
Review audit information  
Maintain the audit trail

### Configuring the Oracle Network Environment

Use Enterprise Manager for configuring the Oracle network environment  
Create additional listeners  
Create Net Service aliases  
Configure connect-time failover  
Control the Oracle Net Listener  
Test Oracle Net connectivity  
Identify when to use shared versus dedicated servers

### Proactive Maintenance

Use statistics  
Manage the Automatic Workload Repository (AWR)  
Use the Automatic Database Diagnostic Monitor (ADDM)  
Describe advisory framework  
Set alert thresholds  
Use server-generated alerts  
Use automated tasks

### Performance Management

Use Enterprise Manager pages to monitor performance  
Use the SQL Tuning Advisor  
Use the SQL Access Advisor  
Use Automatic Shared Memory Management  
Use the Memory Advisor to size memory buffers  
Use performance related dynamic views  
Troubleshoot invalid or unusable objects

### Backup and Recovery Concepts

Identify the types of failure that may occur in an Oracle Database  
Describe ways to tune instance recovery  
Identify the importance of checkpoints, redo log files, and

archived log files  
Configure ARCHIVELOG mode

### Performing Database Backups

Create consistent database backups  
Back your database up without shutting it down  
Create incremental backups  
Automate database backups  
Monitor the flash recovery area

### Performing Database Recovery

Recover from loss of a control file  
Recover from loss of a redo log file  
Perform complete recovery following the loss of a data file

### Performing Flashback

Describe Flashback database  
Restore the table content to a specific point in the past with Flashback Table  
Recover from a dropped table  
View the contents of the database as of any single point in time with Flashback Query  
See versions of a row over time with Flashback Versions Query  
View the transaction history of a row with Flashback Transaction Query

### Moving Data

Describe available ways for moving data  
Create and use directory objects  
Use SQL\*Loader to load data from a non-Oracle database (or user files)  
Explain the general architecture of Data Pump  
Use Data Pump Export and Import to move data between Oracle databases  
Use external tables to move data via platform-independent files