Course Content

Course Description:
The overall objective of this course is to allow the student to gain the skills necessary for day-today administration of an Oracle database. This course is the starting point for Oracle database administrators and also sets the foundation for advanced administrator training and certification. Major tasks to be considered within this course are: software installation and the creation of new databases, database architecture, management of database files, specialized facilities intended to maximize performance of enterprise-scale transactional applications, management of security policies and procedures, utilization of advanced self-tuning and self-management capabilities, performance monitoring, problem troubleshooting, and resolving lock and conflict issues, using the Oracle Enterprise Manager and SQL interfaces for administration tasks, control over database support services, a primer on backup and recovery structures and strategies and operating system-specific considerations for various platforms, especially Linux and MS Windows Server.

Prerequisites:
Oracle Database 11g: SQL Fundamentals and Oracle Database 11g PL/SQL Fundamentals or equivalent knowledge

Topics:

Enterprise Edition Installation
- Identify System Requirements
- The Optimal Flexible Architecture (OFA)
- Oracle_Base
- Oracle_Home
- Configure_the_Installation_Environment
- Enterprise Edition Installation
- DBCA

The Administrator Interface
- Enterprise Manager Tool
- Using EM SQL Worksheet
- Duties of a Database Administrator
- Exploring the Oracle Database Architecture: General

The Oracle Enterprise Architecture

Exploring the Oracle Database Architecture: Instance Memory
- What is an Oracle Database Instance?
- More About the System Global Area (SGA)

Manage Database Storage Structures: Tablespaces
- About Tablespaces
- Tablespace Management
- Drop Tablespace
- Alter Tablespace

Manage Database Storage Structures: Advanced Tablespaces
- More About Temporary Tablespaces
- More About Temporary Tablespace Groups
- More About Permanent Tablespaces
- More About BigFile Tablespaces
- More About the Sysaux Tablespace

Manage Database Storage Structures
- Data Files & Temp Files
- Managing Data Files
- Managing Temp Files
- Enable Oracle-Managed Files (OMF)

Managing Undo Data
- About Undo Space Management
- Configure Automatic Undo Management
- Undo_Management
- Undo_Tablespace
- Undo_Retention
- Guarantee Undo Retention
- Monitor Undo Space
- Use the Undo Advisor

Network Environment: Oracle Shared Servers
- Shared Servers Architecture
- Configure Shared Servers
- Monitor Shared Servers
- V$Shared_Server
- V$Shared_Server_Monitor
- V$Session
- V$Circuit
- V$Dispatcher & V$Dispatcher_Config
- V$Queue

Security: Implementing Database Security
- Database System Privileges
- Database Object Privileges
- Administrator Auditing of Database Activity
- Enhanced Default Security Settings

Security: Administering User Security
- Create & Manage Database Accounts
- Grant & Revoke Database Privileges
- About the PGA
- Managing Memory

Exploring the Oracle Database Architecture: Instance Processes
- Instance Background Processes
- SQL Execution Processes

Creating an Oracle Database
- Create a New Database
- Configure an Existing Database
- Drop a Database
- Manage DBCA Templates
- Manually Create a Database

Managing the Database Instance
- Configuring a Linux Environment
- Starting and Stopping Database Control
- Starting and Stopping the Database Listener
- Starting and Stopping the Database Instance
- More About the Database Files
- Resource Limits Via Profiles
- Alter Profile
- Drop Profile
- Password Management Via Profiles
- About Role-based Security
- With Admin Option
- Alter User...Default Role
- Set Role
- Enhanced Default Security Settings

Moving Data: SQL Loader
- Loader Concepts
- Control File Options
- Load Methods
- Using the EM Interface

Moving Data: Export & Import
- Managing Directory Objects
- About the Data Pump Architecture
- Data Pump Export
- Data Pump Import
- Data Pump Data Dictionary Views
- Using the EM Interface

Database Maintenance & Performance Management

- The Management & Advisory Framework
- Manage the Automatic Workload Repository
- Automatic Database Diagnostic Monitor
- Use Metrics & Alert Thresholds
- Automatic Maintenance Tasks

Managing Concurrency & Locks

- About Latches & Locks
- Manage & Monitor Latches
- Manage & Monitor Locks
- V$Lock
- V$Locked_Object
- V$Session
- V$Session_Wait
- DBA_Blockers & DBA_Waiters
- DBA_DML_Locks & DBA_DDL_Locks
- DML_Locks

Backup & Recovery Concepts & Configuration

- About Database Backup & Recovery Structures
- Managing Redo Data
- Managing Archival Data
- Automatic Crash Recovery
- Creating a Basic Backup Strategy