**Oracle DBA Syllabus**

**◆ Exploring the Oracle Database Architecture**

* List the architectural components of Oracle Database
* Explain the memory structures
* Describe the background processes
* Explain the relationship between logical and physical storage structures

**◆ Oracle Database Management Tools**

* Use database management tools

**◆ Oracle Database Instance**

* Understand initialization parameter files
* Start up and shut down an Oracle database instance
* View the alert log and access dynamic performance views

**◆ Configuring the Oracle Network Environment**

* Configure Oracle Net Services
* Use tools for configuring and managing the Oracle network
* Configure client-side network
* Configure communication between databases

**◆ Managing Database Storage Structures**

* Describe the storage of table row data in blocks
* Create and manage tablespaces

**◆ Administering User Security**

* Create and manage database user accounts
* Grant and revoke privileges
* Create and manage roles
* Create and manage profiles

**◆ Managing Space**

* Explain how Oracle database server automatically manages space
* Save space by using compression
* Proactively monitor and manage tablespace space usage
* Use the Segment Advisor
* Reclaim wasted space from tables and indexes by using the segment shrink functionality
* Manage resumable space allocation

**◆ Managing Undo Data**

* Explain DML and undo data generation
* Monitor and administer undo data
* Describe the difference between undo data and redo data
* Configure undo retention

**◆ Managing Data Concurrency**

* Describe the locking mechanism and how Oracle manages data concurrency
* Monitor and resolve locking conflicts

**◆ Implementing Oracle Database Auditing**

* Explain DBA responsibilities for security and auditing
* Enable standard database auditing and unified auditing

**◆ Backup and Recovery Concepts**

* Identify the importance of checkpoints, redo log files, and archive log files

**◆ Backup and Recovery Configuration**

* Configure the fast recovery area
* Configure ARCHIVELOG mode

**◆ Performing Database Backups**

* Create consistent database backups
* Backup your database without shutting it down
* Create incremental backups
* Automate database backups
* Manage backups

**◆ Performing Database Recovery**

* Determine the need for performing recovery
* Use Recovery Manager (RMAN) and the Data Recovery Advisor to perform recovery of the control file, redo log file, and data file

**◆ Moving Data**

* Describe ways to move data
* Use SQL\*Loader to load data from a non-Oracle database
* Use external tables to move data via platform-independent files
* Explain the general architecture of Oracle Data Pump
* Use Data Pump Export and Import to move data between Oracle databases

**◆ Performing Database Maintenance**

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

**◆ Managing Performance**

* Use Automatic Memory Management
* Use the Memory Advisor to size memory buffers

**◆ Managing Performance: SQL Tuning**

* Manage optimizer statistics
* Use the SQL Tuning advisor
* Use the SQL Access Advisor to tune a workload

**◆ Managing Resources Using Database Resource Manager**

* Configure the Database Resource Manager
* Access and create resource plans
* Monitor the Resource Manager

**◆ Automating Tasks by Using Oracle Scheduler**

* Use Oracle Scheduler to simplify management tasks
* Use job chains to perform a series of related tasks
* Use Scheduler jobs on remote systems
* Use advanced Scheduler features to prioritize jobs

**◆ Installing, Upgrading and Patching the Oracle Database**

* Oracle Software Installation Basics
* Plan for an Oracle Database software installation
* Installing Oracle Grid Infrastructure for a Standalone Server
* Configure storage for Oracle Automatic Storage Management (ASM)
* Install Oracle Grid Infrastructure for a standalone server
* Installing Oracle Database Software
* Install the Oracle Database software
* Creating an Oracle Database Using DBCA
* Create a database by using the Database Configuration Assistant (DBCA)
* Generate database creation scripts by using DBCA
* Manage database design templates by using DBCA
* Configure database options by using DBCA
* Using Oracle Restart
* Use Oracle Restart to manage components
* Upgrading Oracle Database Software
* Describe upgrade methods
* Describe data migration methods
* Describe the upgrade process
* Preparing to Upgrade to Oracle Database 19c
* Describe upgrade requirements when certain features or options are used in Oracle Database
* Use the pre-upgrade information tool before performing an upgrade
* Prepare the new Oracle home prior to performing an upgrade
* Upgrading to Oracle Database 19c
* Upgrade the database to Oracle Database 19c by using the Database Upgrade Assistant (DBUA)
* Perform a manual upgrade to Oracle Database 19c by using scripts and tools
* Performing Post-Upgrade Tasks
* Migrate to unified auditing
* Perform post-upgrade tasks
* Migrating Data by Using Oracle Data Pump