



# Broward Community College

## Course Outline

STATUS:   A  

COMMON COURSE NUMBER:   CTS2442C  

COURSE TITLE:   Oracle DBA: Database Administration Fundamentals II  

CREDIT HOURS:           4          

**CONTACT HOURS BREAKDOWN:**

Lecture/Discussion	<u>          56          </u>
Lab	<u>          8          </u>
Other	<u>                          </u>
Contact Hours/Week	<u>          4          </u>

**CATALOG COURSE DESCRIPTION:**

In this course, students will develop skills for basic network administration, and learn several methods to backup and to recover an Oracle database. Hands-on exercises will give students experience in a realistic technical environment. The skills developed in this class will help prepare students for one of the Oracle DBA certification exams.

Prerequisite: COP 2741C

Corequisite:

**UNIT TITLES:**

- Unit 1: Networking Overview
- Unit 2: Basic Oracle Net Architecture
- Unit 3: Basic Oracle Net Services Server-Side Configuration
- Unit 4: Basic Oracle Net Services Client-Side Configuration
- Unit 5: Usage and Configuration of the Oracle Shared Server
- Unit 6: Backup and Recovery Overview
- Unit 7: Instance and Media Recovery Structures
- Unit 8: Configuration of the Database Archiving Mode
- Unit 9: Oracle Recovery Manager Overview and Configuration
- Unit 10: User Managed Backups
- Unit 11: RMAN Backups
- Unit 12: User-managed Complete Recovery
- Unit 13: RMAN Complete Recovery
- Unit 14: User-managed Incomplete Recovery
- Unit 15: RMAN Incomplete Recovery
- Unit 16: RMAN Repository Maintenance
- Unit 17: RMAN Catalog Creation and Usage
- Unit 18: Transporting Data between Databases

**I. Course Overview:**

LAST REVIEW   Academic Year 2002-03  

NEXT REVIEW

  Academic Year 2007-08  

Interim Revision Dates:

Upon successful completion of this course, the students should be able to perform database and datafile backups; list the Oracle architecture components related to backup and recovery operations; list the different Oracle backup methods and recovery operations; develop network configuration and recovery techniques; describe the database utilities Import and Export; define networking requirements; and configure the network environment for an Oracle client-server system.

## II. Units:

### Unit 1. **Networking Overview**

#### General Outcome:

1.0 In this unit, students are introduced to networking in an Oracle environment.

#### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

1.1 Explain solutions included with Oracle for managing complex networks

1.2 Describe Oracle networking add-on solutions

## Unit 2. Basic Oracle Net Architecture

### General Outcome:

2.0 In this unit, students learn about Oracle's Net Architecture.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

2.1 Explain the key components of Oracle Net architecture

2.2 Explain Oracle Net Services role in client-server connections

2.3 Describe how web client connections are established through Oracle networking products

## Unit 3. Basic Oracle Net Services Server-Side Configuration

### General Outcome:

3.0 In this unit, students learn how to setup Oracle server-side services.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

3.1 Identify How the Listener Responds to Incoming Connections

3.2 Configure the Listener using Oracle Net Manager

3.3 Control the Oracle Net Listener by Using the Listener Control Utility

3.4 Describe Dynamic Service Registration

3.5 Configure the Listener for IIOP and HTTP Connections

## Unit 4. Basic Oracle Net Services Client-Side Configuration

### General Outcome:

4.0 In this unit, students learn how to setup Oracle client-side services.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

4.1 Describe the Difference Between Host Naming and Local Service Name Resolution

4.2 Use Oracle Net Configuration Assistant to Configure Host Naming Method, Local Naming Method, and Net Service Names

4.3 Perform Simple Connection Troubleshooting

## Unit 5. Usage and Configuration of the Oracle Shared Server

### General Outcome:

5.0 In this unit, students learn how to setup an Oracle Shared Server.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

5.1 Identify the Components of the Oracle Shared Server

5.2 Describe the Oracle Shared Server Architecture

5.3 Configure Shared Servers by Using Initialization Parameter

5.4 Configure Dispatchers by Using Initialization Parameters

5.5 Identify Useful Data Dictionary Views

## Unit 6. Backup and Recovery Overview

### General Outcome:

6.0 In this unit, students are introduced to backup and recovery operations and strategies.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

6.1 Describe the Basics of Database Backup, Restore, and Recovery

6.2 List the Types of Failures that May Occur in an Oracle Environment

6.3 Define a Backup and Recovery Strategy

## Unit 7. Instance and Media Recovery Structures

### General Outcome:

7.0 In this unit, students learn about the processes and structures relating to recovery.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

7.1 Describe the Oracle Processes, Memory Structures, and Files Relating to Recovery

7.2 Identify the Importance of Checkpoints, Redo Log Files, and Archived Log Files

7.3 Describe Ways to Tune Instance Recovery

## Unit 8. Configuration of the Database Archiving Mode

### General Outcome:

8.0 In this unit, students learn how to archive a database.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

8.1 Describe Noarchivelog and Archivelog Mode Configuration

8.2 Perform Automatic and Manual Archiving of Redo Log Files

8.3 Describe Multiple Archival Destinations and Processes

## Unit 9. Oracle Recovery Manager (RMAN) Overview and Configuration

### General Outcome:

9.0 In this unit, students are introduced to Oracle's Recovery Manager (RMAN).

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 9.1 Identify the Features and Components of RMAN
- 9.2 Describe the RMAN Repository and Control File Usage
- 9.3 Describe Channel Allocation
- 9.4 Describe Media Management Library Interface
- 9.5 Connect to Recovery Manager
- 9.6 Configure the RMAN Environment

## Unit 10. User-Managed Backups

### General Outcome:

10.0 In this unit, students learn how to perform backups.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

10.1 Describe User-Managed Backup and Recovery Operations

10.2 Perform Closed Database Backups

10.3 Perform Open Database Backups

10.4 Clean Up After a Failed Online Backup

10.5 Back Up the Control File

10.6 Discuss Backup Issues Associated with Read-Only Tablespaces

10.7 Identify the Backup Implications of Operations with NOLOGGING Options

10.8 Use DBVerify to Check for Block Corruption

## Unit 11. RMAN Backups

### General Outcome:

11.0 In this unit, students learn how to use RMAN backups.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

11.1 Identify RMAN Specific Backups

11.2 Use the RMAN BACKUP Command to Create Backup Sets

11.3 Back Up the Control File

11.4 Back Up the Archived Redo Log Files

11.5 Use the RMAN COPY Command to Create Image Copies

## Unit 12. User-Managed Complete Recovery

### General Outcome:

12.0 In this unit, students learn how to perform manual recoveries.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

12.1 Describe Media Recovery

12.2 Perform Recovery in Noarchivelog Mode

12.3 Perform Recovery in Archivelog Mode

12.4 Perform Read-only Tablespace Recovery

12.5 Relocate and Recover a Tablespace

## Unit 13. RMAN Complete Recovery

### General Outcome:

13.0 In this unit, students learn how to use RMAN to perform complete recoveries.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

13.1 Describe the Use of RMAN for Restoration and Recovery

13.2 Perform Recovery in Noarchivelog Mode

13.3 Perform Completing Recovery in Archivelog Mode

13.4 Restore Data Files to a Different Location

13.5 Relocate and Recover a Tablespace

## Unit 14. **User-Managed Incomplete Recovery**

### General Outcome:

14.0 In this unit, students learn how to perform manual, partial recoveries.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

14.1 Describe the Steps of Incomplete Recovery

14.2 Identify the Situations Which Require Incomplete Recovery

14.3 Perform an Incomplete Recovery

14.4 Recover from the Loss of Current Online Redo Logs

## Unit 15. RMAN Incomplete Recovery

### General Outcome:

15.0 In this unit, students learn how to use RMAN to perform partial recoveries.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

15.1 Perform Incomplete Recovery Using UNTIL TIME

15.2 Perform Incomplete Recovery Using UNTIL SEQUENCE

## Unit 16. RMAN Repository Maintenance

### General Outcome:

16.0 In this unit, students learn to perform Repository maintenance.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

16.1 Perform Crosschecking of Backups and Copies

16.2 Update the Repository When Backups Have Been Deleted

16.3 Change the Availability Status of Backups and Copies

16.4 Make a Backup or Copy Exempt from the Retention Policy

16.5 Catalog Backups Made with Operating System Commands

## Unit 17. RMAN Catalog Creation and Usage

### General Outcome:

17.0 In this unit, students learn how to create and use a Recovery Catalog.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

17.1 Describe the Contents of the Recovery Catalog

17.2 List the RMAN Features Which Require the Recovery Catalog

17.3 Create the Recovery Catalog

17.4 Maintain the Recovery Catalog by Using RMAN Commands

17.5 Use RMAN to Register, Resynchronize, and Reset a Database

17.6 Query the Recovery Catalog to Generate Reports and Lists

17.7 Create, Store and Execute Scripts

17.8 Describe Methods for Backing Up and Recovering the Recovery Catalog

## Unit 18. **Transporting Data Between Databases**

### General Outcome:

18.0 In this unit, students learn how to transport data between databases.

### Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

18.1 Export

18.2 Import

18.3 Explain the Guidelines for Using Export and Import