Diploma in Database Administration (990) – Database Administration

Prerequisites: Basic knowledge of relational databases; for example, Access.	**Corequisites:** A pass or higher at Diploma level
Aim: Candidates will learn relational database theory as well as how to use relational database management systems (RDBMS). The course covers the architecture, design, configuration, installation, and maintenance of an Oracle relational database management system. Candidates will gain the knowledge and skills needed to administer an Oracle client/server database in an enterprise network environment. Candidates will learn to query the data dictionary in order to determine the structure of the database; create and manage locally managed tablespaces including adding free space, monitoring free/used space and using the OMF feature to locate and name the underlying datafiles. Techniques and guidelines for managing storage for objects and controlling control concurrency will be demonstrated. Recovery Manager will be used to perform backup and recovery operations in order to resolve issues with lost or corrupted datafiles.	
Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.
Special Requirements: The course requires a combination of lectures, demonstrations, discussions, and hands-on labs.	

Intended Learning Outcomes:	Assessment Criteria:
1 Learn about Oracle architecture and key Oracle software components. Discover differences between Oracle client and server installation options	1.1 Look at the ORACLASS database 1.2 Learn how to use the Oracle Universal Installer 1.3 Examine the use OFA (Optimal Flexible Architecture)
2 Identify the main DBA tools in the Oracle software suite	2.1 Configure Oracle Net to connect to the database 2.2 List the memory and background process components of the database instance 2.3 Start using the Enterprise Manager
3 Learn the steps for creating a database. Understand the prerequisites for creating a database	3.1 Configure initial settings for database creation 3.2 Create, start, and stop a database instance
4 Understand how to use the data dictionary components and views	4.1 List useful dynamic performance views 4.2 Manage and multiplex control files; 4.3 Use OMF to manage control files 4.4 Create new control files 4.5 View control file data
5 Learn to describe redo log files, groups, and members	5.1 Manage redo log groups and members 5.2 Learn to describe and configure diagnostic files
6 Differentiate between logical and physical structures	6.1 Create many types of tablespaces 6.2 Configure and view storage for tablespaces and datafiles 6.3 Use undo data
7 Describe the different types of tables and their storage methods	7.1 Create relational and temporary tables 7.2 Create tables containing varrays and nested tables

		7.3	Create object and partitioned tables
8	Create tables with large object (LOB) columns and tables that are index-organized	8.1	Understand the tasks involved in table management
		8.2	Use data dictionary views to find information about tables and their underlying structures
9	Learn the types of indexes Oracle offers and when to use each type. Understand how to create each type of index	9.1	Determine which data dictionary views contain information on indexes
		9.2	Find out how to monitor index usage and when to drop an index
		9.3	Learn how to modify, rebuild, and coalesce an index
10	Learn the types and the uses of constraints	10.1	Examine the syntax and options for creating constraints
		10.2	Work with practical examples of creating, modifying, and dropping constraints
		10.3	Query database dictionary views to monitor constraints
11	Create, modify, and remove users. Discover when and how to create, use, and drop profiles	11.1	Manage passwords
		11.2	View information about users, profiles, passwords, and resources
12	Identify and manage system and object privileges	12.1	Grant and revoke privileges to users
		12.2	Understand auditing capabilities and practice using auditing commands
13	Discover when and why to use roles. Learn how to create, modify, and remove roles. Learn how to assign roles	13.1	Examine data dictionary views of roles
		13.2	Assign roles and privileges using the Enterprise Management console
14	Examine how globalization support is implemented in the database.	14.1	Use globalization parameters and variables
		14.2	View globalization support information in data dictionary views

Recommended Learning Resources:
Oracle Administration

Text Books	• Expert Oracle Database Administration by Sam R. Alapati. ISBN-10: 1590590228 • Oracle Advanced Tuning and Administration (Oracle Press Series) by Kevin Loney, Eyal Aronoff & Noorali Sonawalla. ISBN-10: 0078825342 • Oracle Administration and Management by Michael R. Ault. ISBN-10: 0471192341
Study Manuals	BCE produced study packs
CD ROM	Power-point slides
Software	Oracle