Diploma in Database Administration (990) – PL/SQL

Prerequisites: Basic knowledge of relational databases; for example, Access.	**Corequisites:** A pass or higher at Diploma level
Aim: Candidates will learn to create and manage PL/SQL program units and data structures, stored procedures and functions, database triggers, and packages to process data using database objects. PL/SQL is the proprietary Oracle language used to provide programming features in an Oracle database. The course covers the use of PL/SQL program units and data structures, stored procedures and functions, database triggers, and packages to process data using database objects. The course train candidates extend their Oracle Relational Database Structured Query Language (SQL) skills into writing Oracle Stored Procedures using PL/SQL in a client/ server environment. In both lecture and lab, candidates will learn PL/SQL Database Programming by using the Oracle SQL*Plus tool and a simple text editor. Proper structured programming design and formatting will be taught using flow diagrams and sample code. Candidates will also learn how database security issues such as database users, roles and grants apply to the execution of PL/SQL code.,	
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 Explain the benefits of using PL/SQL blocks versus several SQL statements. Identify the sections of a PL/SQL block and describe their contents. Identify the mandatory and optional sections of a PL/SQL block.	1.1	Identify an anonymous block and its use
	1.2	Describe how to execute a PL/SQL block
2 Explain the purpose of a variable. Explain the difference between a constant and a variable.	2.1	Identify valid variable names
	2.2	List the valid datatypes for PL/SQL variables
3 Understand how to assign a dynamic datatype for a PL/SQL variable. Initialise a PL/SQL variable. Use DML statements in a PL/SQL block	3.1	Determine when it is appropriate to use an IF statement
	3.2	Identify all the clauses of an IF statement, and state when they should be used
4 Understand how to create an IF statement. Identify the purpose of a loop, and name the types of loops available in Oracle	4.1	Create a basic loop
	4.2	Create a FOR loop
	4.3	Create a WHILE loop
5 Determine when an explicit cursor is required	5.1	Declare, open, and close an explicit cursor
	5.2	Fetch data from an explicit cursor
	5.3	Identify attributes associated with a cursor
6 Understand how to use a cursor FOR loop to retrieve data from a cursor. Declare a cursor in the subquery of a cursor FOR loop	6.1	Evaluate BOOLEAN conditions combined with logical operators
	6.2	Identify the purpose of the exception-handling section of a PL/SQL block
	6.3	Trap predefined exceptions in a PL/SQL

| | block |
| | 6.4   Trap user-defined exceptions in a PL/SQL block |

Recommended Learning Resources:
Oracle PL/SQL

Text Books	• Oracle PL/SQL & Oracle 9i. ISBN-10: 0131603981 • Easy Oracle PL/SQL Programming: Get Started Fast with Working PL/SQL Code Examples by John Garmany. ISBN-10: 0975913573 • Oracle PL/SQL Best Practices by Steven Feuerstein. ISBN-10: 0596514107
Study Manuals	BCE produced study packs
CD ROM	Power-point slides
Software	Oracle Database