

## **NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY ITD 134 – PL/SQL PROGRAMMING (3 CR.)**

### **Course Description**

Presents a working introduction to PL/SQL programming with the Oracle RDBMS environment. Includes PL/SQL fundamentals of block program structure, variables, cursors and exceptions, and creation of program units of procedures, functions, triggers and packages. Lecture 3 hours per week.

### **General Course Purpose**

This course provides a comprehensive foundation sufficient for a student to write PL/SQL programs to access Oracle databases.

### **Course Prerequisites/Corequisites**

Prerequisite: ITD 132

### **Course Objectives**

Upon completing the course, the student will be able to:

- a) Get familiar with a development tool; such as SQL Developer
- b) Learn the structure of PL/SQL blocks
- c) Recall variables and use them in code
- d) Apply loop control structures
- e) Use conditional statement control structures
- f) Know how to select data into variables
- g) Be able to create and use cursors for data selections
- h) Know how to create procedures and functions

### **Major Topics to be Included**

- a) Major Topics to be Included
- b) PL/SQL Block Structure
- c) Declaration of Variables
- d) Loop Control Structures
- e) Conditional statement control structures
- f) Selection of data into variables
- g) Use of cursors for data selections
- h) Procedures and functions

### **Student Learning Outcomes**

PL/SQL Block Structure

- a) Establish Oracle log-in
- b) Identify functional capabilities of the development tool used; such as SQL Developer
- c) Run select statements using the development tool

Declaration of Variables

- a) Learn structure of a PL/SQL block

- b) Identify datatypes
- c) Declare variables
- Loop Control Structures
  - a) Write basic loop construct
  - b) Code WHILE and FOR loops
  - c) Describe the differences between loops
- Conditional statement control structures
  - a) Write simple conditional statements
  - b) Write compound conditional statements
  - c) Describe the differences between conditional operators
- Selection of data into variables
  - a) Code selection of single or multiple columns into variables
  - b) Display the selected values
- Use of cursors for data selections
  - a) Describe the difference between implicit and explicit cursors
  - b) Use cursor attributes
  - c) Use cursor in a loop
- Procedures and functions
  - a) Create procedures with parameters
  - b) Create functions with parameters
  - c) Code single row and aggregate functions
  - d) Implement exception handling
  - e) Create and use triggers

**Required Time Allocation per Topic**

Topics do not need to be followed sequentially. Many topics are taught best as an integrated whole, often revisiting the topic several times, each time at a higher level. The final exam time is not included in the time table. The last category, *Other Optional Content*, leaves time for an instructor to tailor the course to special needs or resources.

Topic	Time in Hours	Percentages
Topic 1: PL/SQL Block Structure	2.5	6%
Topic 2: Declaration of Variables	3	7%
Topic 3: Loop Control Structures	9	20%
Topic 4: Conditional statement control structures	9	20%
Topic 5: Selection of data into variables	3	7%
Topic 6: Use of cursors for data selections	6	13%
Topic 7: Procedures and functions	9.5	20%
Other Optional Content	3	7%
Total	45	100%