Course Outline for CIS 9005

ORACLE: APEX APPLICATION DEVELOPMENT

Effective: Fall 2019

I. CATALOG DESCRIPTION:
   CIS 9005 — ORACLE: APEX APPLICATION DEVELOPMENT — 3.00 units

   Introduction to the techniques and tools required to develop database driven web applications using Oracle Application Express (APEX). Using only a web browser and limited programming experience, you can develop and deploy professional applications. Students study how to design, develop and deploy responsive database-driven web applications using APEX. APEX integrated development environment is utilized to provide practical, hands-on activities.

   2.50 Units Lecture 0.50 Units Lab

   Strongly Recommended
   CIS 9002 - ORACLE: Database Design and SQL Programming
   with a minimum grade of C

   Grading Methods:
   Letter or P/NP

   Discipline:
   • Computer Information Systems

	MIN
Lecture Hours:	45.00
Expected Outside of Class Hours:	90.00
Lab Hours:	27.00
Total Hours:	162.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

   Before entering this course, it is strongly recommended that the student should be able to:

   A. CIS9002
      1. Create, maintain, and manipulate database objects;
      2. Write SQL SELECT statements that display data from single or multiple tables;
      3. Restrict, sort, aggregate, and manipulate data using both single and group functions;

IV. MEASURABLE OBJECTIVES:
   Upon completion of this course, the student should be able to:

   A. Utilize APEX integrated development interface to design, build, deploy database driven web applications
   B. Use SQL workshop to create a database and application
   C. Manage web pages, develop interactive reports
   D. Create, maintain, and manipulate database objects;
   E. Create interactive forms with computations, processes, validation
   F. Create and manage tables views, constraints, synonyms, sequences, and indexes;

V. CONTENT:
   A. Introduction
      1. Course Overview
      2. Getting Started with Oracle Application Express
   B. Create a Basic Database Application
      1. Using SQL Workshop
      2. Creating a Database Application
   C. Pages, Reports, and Grids
      1. Managing Pages in Page Designer
      2. Developing Reports
      3. Managing and Customizing Interactive Reports

4. Managing and Customizing Interactive Grids
    D. Forms and Page Controls
        1. Creating and Using Forms
        2. Creating Application Page Controls
        3. Adding Computations, Processes, and Validations
    E. Navigation, Themes, and Security
        1. Implementing Navigation in your Application
        2. Using Themes and Theme Styles
        3. Implementing Security in your Application
    F. Adding to and Migrating an Application
        1. Adding Additional Pages to your Application
        2. Creating and Using Dynamic Actions and Plug-ins
        3. Migrating Application Development between Environments
    G. Final Project

VI. LAB CONTENT:
    A. Create a Basic Database Application
    B. Pages, Reports, and Grids
    C. Forms and Page Controls
    D. Navigation, Themes, and Security
    E. Adding to and Migrating an Application

VII. METHODS OF INSTRUCTION:
    A. **Lab** -
    B. **Lecture** -
    C. **Demonstration** -
    D. **Projects** -

VIII. TYPICAL ASSIGNMENTS:
    A. In this activity, you create the initial application using the Create Application wizard to define multiple pages.
        1. Now that you have created the underlying tables, you are ready to create a desktop application.
        2. You will be adding reports and forms for the tables you created.
        3. Generally, when developing an application you will not know all of the pages required at the beginning.
        4. Therefore, you will only generate a select number of pages initially, and then use the wizard to add additional pages as required.
        5. However, for this exercise you will generate most of the pages required for the application up front.
    B. Hands-on lab assignment, write the SQL program to:
        1. Display for each employee the employee number, last name, salary, and salary increased by 15% and expressed as a whole number.
            a. Label the column New Salary
    C. Create the Entity Relationship Diagram from the posted business scenerio

IX. EVALUATION:
Methods/Frequency

    A. Exams/Tests
        2 - midterm, final
    B. Quizzes
        one per chapter
    C. Home Work
        weekly
    D. Lab Activities
        weekly

X. TYPICAL TEXTS:
    1. Dawes, Chip. *OCA/OCP Introduction to Oracle11g SQL Study Guide.* 11th ed., Sybex, 2015.
    2. Corporation, Oracle. *Oracle iLearning.* 2017 ed., Oracle Corporation Curriculum, 2017.
    3. Sciore, Edward. *Understanding Oracle APEX 5 Application Development.* 1st ed., Apress Press, 2015.

XI. OTHER MATERIALS REQUIRED OF STUDENTS:
    A. Access to the World Wide Web with any major Web browser
    B. Storage: flash, portable HD, cloud