BAKER COLLEGE
STUDENT LEARNING OUTCOMES

CS 4220 Database Programming II
3 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Demonstrate an understanding of Database terminology
   a. Explain use of software tools and SQL queries.
   b. Describe database triggers and syntax
   c. Explain host or bin variables and how to use %TYPE and %ROWTYPE attribute.
   d. Explain dynamic SQL and PL/SQL
   e. Explain direct and indirect dependencies

2. Manage Oracle Software
   a. Load data into Oracle tables from external files using SQL *Loader utility
   b. Demonstrate exception-handling
   c. Construct looping action and decision structures: IF-THEN and CASE.

3. Develop database programs
   a. Explain techniques for debugging PL/SQL programs.
   b. Manage errors with exception handlers

4. Work with dependences
   a. Demonstrate local program unit program dependencies and database object dependencies
   b. Identify the unique nature of packaging dependencies
   c. Manipulate remote object dependency actions and remote dependency invalidation methods.

5. Use procedures
   a. Explain the use of IN/OUT and passing of parameter values
   b. Describe how to trap common runtime errors

6. Display proficiency in coding PL/SQL programs
   a. Write SQL queries within PL/SQL and the use of SQL single-row functions in PL/SQL.
   b. Demonstrate how to embed DML statements within PL/SQL.
   c. Use PL/SQL to procedurally manipulate the data with cursors
   d. Create triggers
   e. Create Procedures and Functions
   f. Create program units
   g. Create package specifications and bodies

Big Ideas and Essential Questions

Big Ideas

- Evolution of Databases
- Core Principles of Oracle Databases
- Problem Solving using PL/SQL programming environment

Essential Questions

1. What are the elements of Oracle Databases
2. How does PL/SQL handle exceptions
3. Why do programmers use PL/SQL rather than other programming languages?

These SLOs are approved for experiential credit.

Effective: Fall 2017