A. Protocol

Course Name: Data Base Application Development
Course Number: CIS 322
Credits: 3
Prerequisite: CIS 321 Data Base Management Systems and Data Base Design with a C- or better

Maximum Class Size (face-to-face): 35
Maximum Class Size (online): 35
*Justification for online class size is due to the highly-technical nature of the course.

B. Objectives of the Course:

1) Discuss the Oracle Relational Architecture and Client/Server Databases, including the use of keys.
2) Create Oracle tables using various data types and employing constraints
3) Create SQL scripts containing complex search conditions such as Using Calculations in Database Queries, Formatting Output with Grouping/Sorting/Suppression Functions, Joining Multiple Tables, and the use of the Set Operators and Nested Queries.
4) Load Oracle tables via simple insert SQL statements or possibly through various tools such as SQLLoad using OS Scripts.
5) Modify Oracle table contents through a series of complex SQL update scripts that employ Insert, Update, Delete and View Data and employ Transactions, Commit and Rollback.
6) Demonstrate an understanding of the concepts behind Indexing by Creating Indexes based on response time issues and the use of Triggers to enforce Referential Integrity.
7) Show a basic level of competency in employing PL/SQL to work through Conditional Operations and Looping necessary in some table-content modifications.

C. Catalog Description:

Building upon the conceptual understanding of a modern DBMS (Data Base Management System) and database and table design concepts gained in CIS 321 – Database Management Systems and Database Design, this course provides the student with the practice of applying database technology, via the Oracle DBMS, to the solution of business and other information-related problems. Experience is provided with database design and implementation based on a thorough analysis of requirements and information modeling. The use of Structured Query Language (SQL) for interaction with a working DBMS for data creation, manipulation and extraction is stressed as well as optimization techniques, such as view creation and indexing. PL/SQL and database triggers are introduced. Prerequisite: CIS 321 Data Base Management Systems and Data Base Design with a C- or better. Three credits.
D. Outline of the Course:

1) Overview of Oracle Relational Architecture and Client/Server Databases
2) Creating and Modifying Oracle Database Tables
   a. Oracle User Accounts
   b. Defining Oracle Database Tables
   c. Oracle Data Types
   d. Constraints
   e. Using SQL Plus to Create Database Tables
   f. Modifying Existing Tables and Deleting Tables
3) Using SQL Queries
   a. Insert, Update, Delete and View Data
      i. Transactions, Commit and Rollback.
   b. Complex search conditions
   c. Database Object Privileges
   d. Using Calculations in Database Queries
   e. Formatting Output with Grouping/Sorting/Suppression Functions
   f. Joining Multiple Tables
      i. Nested Queries
      ii. Set Operators – Union, Intersect, Minus
   g. Creating and Using Database Views
4) Introduction to PL/SQL (Procedural Language/Structured Query Language)
   a. Variables, Data Types, and Program Blocks
   b. Writing and Executing and Debugging a PL/SQL program and Displaying the
      1. Output
   c. Decision Control Structures, Loops and cursors.
5) Advanced SQL and PL/SQL concepts
   a. Database Indexes
   b. Triggers
   c. Packages and Procs

E. Teaching Methodology:

1) Traditional Classroom Methodology

   This course will be taught using some lecture/discussion method followed with a majority
   of class time using hands-on lab activities on the presented concepts. Some cooperative
   group method will be employed during appropriate sections of the course.

2) Online Methodology

   This course will be taught using a variety of methods including lecture videos, activities,
   group collaborative learning, and discussion boards.
   Quality Matters™ Statement – The online course follows the standards of the Quality
   Matters™ rubric. An online homework system is required in this course.

F. Text

Guide to Oracle 10g
Publisher is Thomson Course Technology
Authors Morrison, Morrison and Conrad
G. Assessment Activities:

1) Traditional Classroom Assessment

Various assessment methods are used, at the discretion of the instructor, and can include exams, quizzes, tutorials, homework assignments, programs/projects/labs. An online homework submission system is used in this course.

2) Online Assessment

Various assessment methods are used, at the discretion of the instructor, and can include exams, quizzes, tutorials, homework assignments, programs/projects, wikis, online journals and labs. An online homework system is required in this course.

H. Accommodations for Students with Disabilities:

Students with disabilities:

- Reserve the right to decide when to self-identify and when to request accommodations.
- Will register with the Office for Students with Disabilities (OSD) each semester to receive accommodations.
- Might be required to communicate with faculty for accommodations, which specifically involve the faculty.
- Will present the OSD Accommodation Approval Notice to faculty when requesting accommodations that involve the faculty.

Office for Students with Disabilities

Requests for approval for reasonable accommodations should be directed to the Office for Students with Disabilities (OSD). Approved accommodations will be recorded on the OSD Accommodation Approval notice and provided to the student. Students are expected to adhere to OSD procedures for self-identifying, providing documentation and requesting accommodations in a timely manner.

Contact Information:

- Location: Azorsky Building – Room 105
- Phone: (724) 938-5781
- Fax: (724) 938-4599
- Email: osdmail@calu.edu
- Web Site: www.calu.edu (search “disability”)

I. Supportive Instructional Materials, e.g. library materials, web sites, etc.

Books located in the PILOT catalogs, library databases (Ebscohost, CIOS, Proquest, Lexis
Nexis) which include books, journals, magazines, and newspapers.
Books located in the PILOT catalogues, library databases (Ebscohost, CIOS, Proquest, Lexis-
Nexis) which include books, journals, magazines, and newspapers such as:


Feuerstein, Steven, “Advanced Oracle PL/SQL: programming with packages, 1st ed” [electronic


Gurry, Mark, “Oracle performance tuning 2nd ed.” [electronic resource], O'Reilly & Associates,
1996.


Information for Course Proposals

J. Proposed Instructors: Dr. Gina Boff, Dr. Gary DeLorenzo, Dr. Lisa Kovalchick or any other tenure-track CIS faculty from the Department of Mathematics, Computer Science and Information Systems.

K. Rationale for Course: Course already exists and being updated for Global Online delivery.

L. Specialized Equipment or Supplies Needed: None

M. Answer the following questions using complete sentences:

1. Does the course require additional human resources? No, the course is already being taught.

2. Does the course require additional physical resources? No. The current physical resources on campus can accommodate the teaching of this course.

3. Does the course change the requirements in any particular major? No.

4. Does the course replace an existing course? No, this course does not replace any existing courses.

5. How often will the course be taught? This course will be taught once every year.

6. Does the course duplicate an existing course in another Department or College? No.

7. What is the recommended maximum class size for this course? Recommended class size for this course is 35 for online sections, due to the highly-technical nature of the course.

N. If the proposed course includes substantial material that is traditionally taught in another discipline, you must request a statement of support from the department chair that houses that discipline. This course does not include substantial material from another discipline.

O. Please identify if you are proposing to have this course considered as a menu course for General Education. If yes, justify and demonstrate the reasons based on the categories for General Education. The General Education Committee must consider and approve the course proposal before consideration by the UCC. No; this course will not be offered on the GenEd menu.