COURSE OUTLINE

# COMPUTER SCIENCE/INFORMATION SYSTEMS 232
# Oracle/SQL

## I. Catalog Statement

Computer Science/Information Systems 232 is an introduction to the Oracle Relational Database Management System and the use of Oracle's Structured Query Language (SQL* Plus) query tool. This class will focus on the design and organization of a specific schema diagram and how to build SQL statements to access the data.

Units – 1.5
Lecture/Demonstration Hours – 3.0 (8 weeks)

Recommended Preparation: Eligibility for CABOT 105, English 120, or ESL 151

Note: Students with no previous computer experience are advised to take Computer Science/Information Systems 100 or 101 before taking this course. Students without keyboarding skills are advised to take CABOT 200 concurrently.

## II. Course Entry Expectations

Skills Level Ranges: Reading 4; Writing 4; Listening/Speaking 4; Math 3.

## III. Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:
1. explain table structures and data;
2. construct basic SQL statements to query data;
3. use character and number functions;
4. use data and conversion functions;
5. use aggregate functions;
6. compose subqueries;
7. use set operators;
8. use complex joins.

## IV. Course Content **Total Contact Hours = 24**

A. SQL and Data 4 hours
   1. Data, databases, and the definition of SQL
   2. A Case Study Schema Diagram
   3. Referential Integrity and Table Relationships
   4. The SQL*PLUS environment

B. SQL: The Basics — 4 hours
   1. The Anatomy of a SELECT Statement
   2. Editing a SQL Statement
   3. The WHERE Clause: Comparison and Logical Operators
   4. The ORDER BY Clause

C. Character and Number Functions — 2 hours
   1. Character Functions
   2. Number Functions

D. Date and Conversion Functions — 2 hours
   1. Converting from One Datatype to Another
   2. Applying Oracle's Date Format Models
   3. Performing Date and Time Math
   4. The NVL and DECODE Functions

E. Aggregate Functions, GROUP BY, and HAVING — 2 hours
   1. Aggregate Functions
   2. The GROUP BY and HAVING Clauses

F. Equijoins — 2 hours
   1. The Two Table Join
   2. Joining More than Two Tables

G. Subqueries — 4 hours
   1. Simple Subqueries
   2. Correlated Subqueries
   3. ANY, SOME, and ALL Operators in Subqueries

H. Set Operators — 2 hours
   1. The Power of UNION and UNION ALL
   2. The MINUS and INTERSECT Set Operators

I. Complex Joins — 2 hours
   1. Outer Joins
   2. Self-Joins

## V. Methods of Presentation

The following instructional methodologies may be used in the course:
1. lecture;
2. demonstration.

## VI. Assignments and Methods of Evaluation

1. Hands-on Lab assignments
2. Midterm examination – written and hands-on application
3. Final

## VII. Textbook

Beighley, Head First SQL, Current Edition
San Francisco, O'Reilly Publisher, 2007
10th Grade Reading Level. ISBN: 0-596-52684-9