BAKER COLLEGE
STUDENT LEARNING OUTCOMES

CS 4650 Advanced Database Topics
3 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Explore relational database principles, concepts and design
    a. Distinguish between the various levels of normalization
    b. Implement referential integrity
    c. Explain the purpose and process of denormalization
    d. Describe Oracle database indexes
2. Construct statements using Oracle SQL
    a. Differentiate between DDL and DML
    b. Demonstrate advanced techniques for SELECT, INSERT, UPDATE AND DELETE statements
    c. Demonstrate COMMIT and ROLLBACK for transaction control
    d. Use Sequence, ROWID, and ROWNUM
3. Construct scripts using PL/SQL
    a. Use constraints, triggers, stored procedures and functions
    b. Use functions in queries
    c. Use V$SQLAREA and V$SQL
4. Use efficiency tools
    a. Make efficient queries by using EXPLAIN PLAN
    b. Make efficient joins by using tuning techniques
    c. Make efficient subqueries by using tuning techniques
    d. Apply parsing and optimization to SQL execution
    e. Use the ANALYZE command and the DBMS_STATS package
    f. Use of SQL trace and TKPROF
    g. Tune tablespaces
5. Demonstrate the ability to work individually and/or with a team to perform research and apply the advanced database topics learned in the course such as data model tuning, SQL code tuning, and configuration tuning
    a. Work individually and/or with a team to perform research.
    b. Apply the advanced database topics learned to various types of tuning.

These SLOs are approved for experiential credit.

Effective: Fall 2017