BAKER COLLEGE
STUDENT LEARNING OUTCOMES

CIS 3510 System Modeling and Design
3 Semester Hours

Student Learning Outcomes & Enabling Objectives

1. Contrast conceptual database models and implementation database models.
    a. Explain various database models and advantages of good database design.
    b. Apply identified database models to specific developed database examples.
    c. Identify specific important advantages that are found within a good database.
    d. Identify specific steps needed for a proper database model implementation.

2. Contrast the characteristics of a relationship database model, an entity relationship database model, and an object-oriented database model.
    a. Analyze the data relationship types that exist within a relational database diagram, a Crow's Foot model ERD diagram, and a Chen model ERD diagram.
    b. Identify specific characteristics of a relational database model, and an object-oriented database model.
    c. Apply the different techniques necessary to reconcile conflicting goals when constructing and implementing a database model.
    d. Explain the principles and necessity of database normalization using various database models.

3. Design an original database model using the principles of DBLC and ER Modeling.
    a. Identify specific elements contained within a database model using the principles of DBLC and ER modeling.
    b. Construct an Entity Relationship (ER) diagram for a sample database.
    c. Apply the steps, techniques, and application tools involved in the Database Life Cycle (DBLC).

4. Contrast object-oriented database design methodologies with traditional structured database design methodologies.
    a. Identify specific elements used in an object-oriented database design.
    b. Analyze each element contained within object-orientated database design and traditional structured database design methodologies.

c. Use the "object Think" techniques to describe and interpret Object-Oriented Requirements models.
d. Describe the steps, techniques, and application tools involved in the Object-Oriented System Development Life Cycle (SDLC).
e. Apply object-oriented concepts and techniques to various database designs using the Universal Modeling Language notation (UML).

5. Apply techniques to overcome special considerations, requirements, and obstacles faced when applying ER, DBLC, and SDLC methodologies to Web-based database systems.
   a. Identify specific techniques to overcome special considerations, requirements, and obstacles faced when applying E-R, DBLC, and SDLC methodologies to Web-based database systems.

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These SLOs are approved for experiential credit.

Effective: Fall 2017