**MIS2502: Exam 2 Study Guide**

The following is a list of items that you should review in preparation for the exam. Note that not every item on this list may be on the exam, and there may be items on the exam not on this list.

It is a closed-book, closed-notes exam.

**SQL (this exam will cover Joins, Subselects, CREATE, ALTER, INSERT, UPDATE, and DELETE)**

* Given the schema of a database, be able to create the SQL statements that will
  + Construct a query that requires a join of multiple tables
  + Construct a query that contains a subselect   
    (i.e., determine the customers with the highest sales)
  + Create a table based on a list of its metadata using CREATE TABLE
  + Change the structure of a table using ALTER TABLE
  + Add a record to a table using INSERT
  + Update an existing record in a table using UPDATE
  + Delete a record from a table using DELETE
* Be familiar with using conditional statements in the UPDATE and DELETE statements
* Identify how to add records to a table created from a many-to-many relationship so that the new record associates two existing records in the associated tables  
  (i.e., add a record to a film-actor table that associates a particular film with a particular actor)

**Dimensional Data Modeling**

* What is the difference between a data warehouse, a data mart, and a data cube
  + What purpose does each serve?
* What is a data cube? How does it aggregate data?
  + Give an example of “slicing” data
* What is the star schema? How does it relate to a data cube?
* Be able to identify facts, dimensions, and their associated data fields that address a business question
  + Label a data cube that reflects those facts and dimensions
* Kimball’s four step process for data mart design
  + What is granularity? Why is it important?
  + What happens if the granularity of the information you want doesn’t match the granularity of the cube?

**Pivot Table Analysis**

* Explain the relationship between a pivot table and a data cube
  + Be able to sketch a data cube based on a set of dimensions and values
* Given a question about a set of data, be able to identify the fields required to create a pivot table
  + Identify which fields are assigned as VALUES and which ones are assigned as ROWS
  + Identify the correct function for aggregation: i.e., SUM, COUNT, AVERAGE
* Explain how slicing a data cube is similar to choosing values for rows and applying filters