**Metropolitan State University**

**ICS 311 —Database Management Systems**

**Term Project Step 2**

**Conceptual Database Design**

Due: see syllabus

**Total: 24 Points**

In this step of the project you are required to provide the conceptual design for your application database and draw the Entity-Relationship Diagram (ERD). The purpose of the ERD is to record and model the business rules that need to be supported by your application as stated in your project proposal.

**Part 1: Entity-Relationship Diagram (ERD) (12 Points):**

Draw the Entity-Relationship Diagram (ERD) for your application to show the entities and relationships. Make sure to clearly show the following:

1- All entities (i.e. objects) that are needed to implement your application

2- Each entity must be identified by a primary key and described by a set of attributes.

3- List clearly all relationships between entities (Business Rules). For example, the relationship between Customer and Invoice entities is described as “Each customer can have more than one invoice, however, an invoice can belong to only one customer.

4- Relationship cardinalities for all relationships in your ERD (1-to-1, 1-to-M, or M-to-M).

**Part 2: Relational Schema (12 Points):**

Convert the ERD that you designed in Part 1 into the corresponding relational schema. The relational schema should include the following:

1. Table names
2. Attribute names and data types
3. Primary keys
4. Foreign keys

Note: Use the tables that you identified in Project Step 1