**CMPS 439/539 Term Project**  **100 points**

**Purpose of project:** *to reinforce learning about user requirements, conceptual design, logical design, and implementation of a database system; to gain additional experience in working with others, preparing formal written documents, and formally presenting results; to incorporate critical thinking in determining ways to exceed the minimal requirements for better results.*

**Each project will include the following, neatly packaged:**

# Written description of project (1000++ words) 10 points

The description will contain background information about the enterprise and how and why the database will be used. It will talk about what types of data are necessary and how the various data interrelates with each other (including describing your conceptual model). Any constraints must be addressed (data, implementation, performance, user, etc.). Any other issues such as security, integrity, data distribution, hardware, software, users, etc., should also be addressed. HINT: Think about ALL the topics covered in the course and discuss how these play a part in your project. There should be NO typographical, spelling, or grammatical errors.

# Conceptual design and model, and glossary (using symbols, etc., presented in class) 15 points

You may create your design with software such as SmartDraw, or you can draw it out by hand using templates and straight edges. Your ER model MUST correspond to your description and vice versa. You must have at least 10 entities and at least 10 relationships. A glossary must be provided that describes in English the meaning of every entity, every relationship, and every property (attribute) for every entity or relationship.

# Convert conceptual design to logical model and create meta-data 20 points

The logical design will include a list of all the relations in your database, for example,  
 STUDENT(W#, LNAME, FNAME, MAJOR). These are derived from your entities and some of the relationships, and then the normalization process must be applied to assure a good design. The meta-data will give the types, lengths, units, and/or other constraints for every attribute of every relation.

# Queries to the database (5 in English and in SQL) 10 points

State a query in English and whether or not it changes the database. These might be retrievals or update operations. Code the same query in basic SQL as presented in class.

# Implementation of project in Microsoft Access 10 points

There should be at least 5 tuples in every relation, however there must be enough to adequately test all your queries. You must create at least 5 queries for this implementation. These need not correspond exactly to the queries in previous section.

# Formal Presentation 15 points

You must prepare a 15 minute formal presentation of your work. There should be NO typographical, spelling, or grammar errors on your slides. It must be interesting, and the class must be able to see everything. For example, do not put the entire ER model on a slide and spend 12 minutes going through every thing. You might rather highlight a few of the more interesting aspects of your design, showing a subset of your model. Discuss issues that caused problems for you and how you resolved them. You may include demonstrations of interesting aspects of your implementation. Have everything ready and tested ahead of time. There should be no time spent waiting on you to get set up, connect to some web site, etc.

# Making it special 20 points

Choose your project and team carefully. You will decide what you can do to go above and beyond the minimal requirements listed above. Some suggestions might include, but are not limited to: creating special user interfaces or reports for your implementation using a different language, for example, using real world data and a lot of it, having special effects, dress, music, etc in your presentation, importing your implementation to other platforms, having an implementation that can be used by someone in the real world.