COP 4710 – Fall 2013
Exam #1 Review

❑ Exam #1 covers the lecture notes on the course web page from August 20th through September 12th (not including installing/configuring MSQL notes). (See course calendar.)
❑ This material is presented in Chapters 1, 2, and 3 in the textbook.
❑ Material on relational algebra is not covered on this exam.

Chapter 1 – Introduction
- What is a database
- Data vs. Information
- Metadata
- Derived data versus physical data
- File system approach – advantages/disadvantages
- Database approach – advantages/disadvantages
- Levels of abstraction in a DBMS
    external/conceptual/physical levels and mappings
- Data independence

Chapter 2 – Conceptual Data Modeling
- Database design process – 6 basic steps
- E-R model
    entities, attributes, relationships
- Mapping cardinalities
- Participation constraints
- Keys, superkeys, candidate keys, primary keys
- Degree of a relationship set
- Placement of relationship attributes (mapping cardinalities)
- Entity sets vs. Attributes
- Entity sets vs. Relationship sets
- E-R diagrams – know the symbols and what they mean
- Weak entity sets vs. Strong entity sets
- Specialization and Generalization
- Attribute inheritance
- Constraints on generalization/specialization
- Aggregation

Chapter 3 – The Relational Data Model

- Introduction to the relational data model
- Tuples, attributes, relations
- Logical database design
- Converting the conceptual model into a logical model
- Relational data model

The test will contain a mixture of short answer and work problems such as drawing E-R diagrams or converting E-R diagrams into relational schemas.

All test questions will be based entirely upon the class notes which are posted on the course web page. Any information in the book which would appear on the test will also appear in the notes. There will be no questions on the test which are based upon material that appears only in the book.