

## ITEC340 Database I – Review for Exam 01

**Scope** – Chapter 1, 3, sections 4.1-4.5 in Chapter 4, and sections 14.1~14.2 in Chapter 14; and all materials posted, except for links marked as “Supplementary Reading.”

**Method** – pencil and paper

**Format** – multiple choice, fill in the blank, short answer, and problem solving problems.

### Review Questions

Note: The following are highlights of the course. The exam will focus on these questions but may go beyond.

Chapter 1 & 14 – database overview

1. How does the Three Schema Architecture support data independence?
2. What are the major functionalities of the DBMS?
3. What are major DBMS products?
4. What are the advantages of DB technology, as opposed to file-based processing?

Chapter 3 – relational database

5. What are the integrity rules of a relational database? Explain them.
6. What is the definition of a super key, a candidate key, a primary key, a foreign key, and a composite key? How are they related?
7. What is the difference between a candidate key and a super key?
8. What is the relationship between the referential integrity rule and foreign keys? How is this related to the joining condition when joining tables?
9. What is a Cartesian product? How is this relevant to joining tables?
10. How do you interpret NULL (what does it mean when a value is NULL)?
11. DDL – know how to write SQL code to create relational tables and set up constraints.

Chapter 4 – SQL

12. What can you include (and not include) in a SELECT statement when there is a GROUP BY clause?
13. What is the difference between a WHERE clause and a HAVING clause?
14. How may NULL mess up your query result, such as in COUNT() or in calculating aggregate values (how do you interpret an aggregated value for rows grouped together because they all have NULL in the column(s) in the GROUP BY clause). Is one NULL equal to another?
15. Know how to write basic queries, including using compound logical conditions, group by, inner joins, and set operations.