COMP 3311 assignment 1a (ER diagram) Spring 2015

Due date: 23th Feb 2014 (12 noon)

Assignment Rules:

1) This is an *individual* assignment; you are required to work on your own.
2) The assignment solution you submit must be solely your own work; copying or letting others to copy are both considered cheating.

Assignment description:

You are required to create an Entity-Relationship (ER) diagram for the following scenario of a university department. Your ER diagram should clearly show all the entities, relationships, attributes, keys (underline the primary keys with solid lines, underline the discriminator(s) with dashed line(s)). Assume all the relationships are **binary**. Your ER diagram should also clearly show the cardinality constraints and the participation constraints. If you have additional assumptions, clearly specify them.

- A University department offers a number of **courses** for the students. Each course has a unique course ID, a course name, number of credits, and zero or more prerequisite **courses**.

- The **courses** are offered at most once in each semester. For each **course offering**, there is an offering number (unique among the offerings of the same course), the year and semester it is offered, the classroom number, the number of students taking it, and the recommended number of **TAs**.

- The current recommended number of **TAs** assigned to an offering is equal to *ceil(number of students/40)*, where *ceil* is a function that rounds the input number to the smallest integer that is greater than or equal to the input (e.g., *ceil(20/40)=1, ceil(40/40)=1*). The equation

for the recommended number of **TAs** may change based on the number of available **TAs** in each semester.

- The department has a number of **professors** who teach the **course offerings**. A professor has a unique staff ID, a last-name, a first-name, at least one office phone number(s), and a field of expertise (for example, "Database").

- The department also has a number of **TAs** who assist to teach the **course offerings**. Each TA has a unique student ID, a lastname, a first-name, and exactly one office phone number.

- Each TA works for exactly one course offering in a semester.

- For each course offering, there is at least one professor assigned to teach it.

- For each course offering, there is exactly one professor in charge of it (i.e. the head professor of the offering). One professor will be in charge of at most one offering.

- A professor has exactly one preferred **TAs**. A particular TA could be preferred by one or more **professors**.

- A TA has one or more preferred **course offerings**. A particular course offering could be preferred by zero or more **TAs**.

- A TA has at least one professor as his/her academic supervisor.

Submission:

❖ Please write ***Clearly*** your ***name***, ***student ID*** and ***tutorial session***(e.g. "T01", "T02") on the first line of your assignment.

❖ You are required to submit a hardcopy to the assignment box labelled with "Comp3311(L1)" or "Comp3311(L2)" outside the room 4210A, corresponding to the lecture you attend.

❖ <u>No Late submission will be accepted!</u>