

**CS/DSA 4513 – Dr. Le Gruenwald**  
**Practice Homework 1**  
**(NOT TO BE TURNED IN; SOLUTIONS ARE ON THE CLASS WEBSITE)**

**Problem 1:**

Construct an ER diagram for the following problem.

A university needs a database to hold the current information on its students. An initial analysis of the requirements produced the below facts:

- Each of the faculty members in the university is identified by a unique name, and a faculty head is responsible for each faculty member.
- There are two types of faculty members: tenured and tenure-track. For each tenured faculty member, the university keeps track of the years when his/her post-tenure evaluations were done. For each tenure-track faculty member, the semester and year when his/her tenure evaluation will be conducted is recorded.
- There are several majors in the university. Some majors are managed by one faculty member, whereas others are managed jointly by two or more faculty members. Each major has a unique name and a number of required courses.
- Teaching is organized into courses, and varying numbers of tutorials are organized for each course.
- Each course is supervised by one faculty member.
- To take certain courses, a student must first pass their prerequisite courses.
- Each course is at a given level, and has a credit-point value and a unique name.
- Each course has one lecturer in charge of the course. The university keeps a record of the lecturer's name and address.
- Each course can have a number of tutors.
- Any number of students can be enrolled in each of the majors. Each student can be enrolled in only one major, and the university keeps a record of that student's name and address and an emergency contact phone number.
- Any number of students can be enrolled in a course, and each student in a course can be enrolled in only one tutorial for that course.
- Each tutorial has one tutor assigned to it.
- Each tutorial is given in an assigned room at a given time on a given day and has a tutorial number.
- A tutor can tutor in more than one tutorial for one or more courses.
- Each tutor not only supervises tutorials but also lectures some course.

**Problem 2:**

Practice exercise 6.1

**Problem 3:**

Practice exercise 6.2

**Problem 4:**

Practice exercise 6.7