

CSCD 327 Lab 7 (12 points)

Due: December 7, 2020

1. (4 points) A university database contains information about professors (identified by social security number, or SSN) and courses (identified by Course_ID). Professors **teach** courses; each of the following situations concerns the **teach** relationship set. For each situation, draw an ER diagram that describes it (assuming no further constraints hold).

- a) Professors can teach the same course in several semesters, but only the most recent such offering needs to be recorded. (**Assume this condition applies in all subsequent questions.**)
- b) Every professor must teach some course.
- c) Every professor teaches exactly one course (no more, no less).
- d) Every professor teaches exactly one course (no more, no less), and every course must be taught by some professor.

2. (8 points)

You are going to set up a database company that builds a product for art galleries. The core of this product is a database that captures all the information that galleries need to maintain. Galleries keep information about **artists**, their names (which are unique), birthplaces, age, and style of art. For each piece of **artwork**, we need to record its unique title, the year it was made, its type of art (e.g., painting, lithograph, sculpture, photograph), and its price. An artist may **paint** many pieces of artwork and a piece of artwork is done by one artist. Pieces of artwork are also **classified** into **groups** of various kinds (for example, portraits, works by Picasso, or works of the 19th century). A given piece may belong to more than one group. Each group is identified by a name that describes the group. Finally, galleries keep information about customers. For each **customer**, galleries keep that person's unique name, address, total amount of dollars spent in the gallery, and the artists and groups of art that the customer tends to **like**. Draw the ER diagram for the database.