

# CSC4341 Principles of Database Systems

## Homework 3

### Database Design (Part I)

Design a database for the Student Registration System (SRS) of Texas Wesleyan University. A detailed description of the system to be built is given in the last section of this document.

### Requirements:

You will need to follow the database design process we studied in class for this assignment. First, design an E/R diagram for the database, and then translate the E/R diagram into relational database tables using the mapping algorithms. After that, write database definition scripts for the tables and run them to create the tables on the MySQL database on our Linux server. Once the tables are created, insert some sample data records in the tables. Write some sample SQL queries to test the tables. Refine your database design if necessary.

### Submissions:

1. ER diagrams

2. Table structure with sample data records. You can do so by running a SQL query like: `select * from table_name`
3. Queries you used for testing your tables.
4. Extra points will be given for database modeling using MySQL Workbench tool.
5. Turn in printout of your work.
6. Your database tables will be also checked on the MySQL database during grading.

## Description of Student Registration System (SRS)

The information to be stored in the database system includes four major categories of data: personal information about faculty and students, academic records of students, information about courses and course offerings, and teaching records of faculty. Information about classrooms and other auxiliary data are also stored in the system. After the database is completed, the user should be able to retrieve the following information:

1. Student and faculty personal information such as names and the department where students study in or faculty work for.
2. Student transcript
3. Faculty teaching history
4. History of course offerings by subject/discipline
5. Course description and prerequisites <sup>1</sup>
6. Classroom schedules
7. Class information<sup>2</sup>

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<sup>1</sup>A course may require multiple courses as prerequisites

<sup>2</sup>Classes differ from courses. A course is a required entity described in the degree plan/curriculum, whereas a class is an “instance” of the course delivered in classroom. A course can be taught in multiple classes/sections in single semester.