Stevens Institute of Technology

Department of Computer Science

CS442: Database Management System

**In-class exercise**

**Translate ER diagram to Relational Model**

September 23, 2016

A university registrar’s office maintains data about the following entities:

* **courses**, including number, title, credits, syllabus, and prerequisites;
* **course offerings**, including course number, year, semester, section number, instructor(s), time, and classroom;
* **students**, including student-id, name, and program;
* **instructors**, including identification number, name, department, and title.

Further, the following information must be appropriately modeled:

1. The offering courses entirely depend on the courses.
2. For each semester, the students enrolled in the courses that are offered,
3. Each student gets a grade for each course he/she enrolled,
4. Each offered course must be assigned to at least one instructor, and
5. Each offered course can have more than one instructor.

Q1: Construct an E-R diagram for the registrar’s office. Specify the key and participation constraints for each relationship set. Specify the weak entity set if there is any.

Q2: Convert the constructed ER diagram into relations