# COP 5725 Lab-3 – Relational Models

**Activities**: Your group should confer to complete the following lab parts initially on the whiteboard.

**Submission:**

One group member should reproduce the group’s complete relational model for each part in a digital form (using any drawing tool you wish) and embed the image in a Word document. Excel works well for this, using cells for each data field, and lines/arrows to show the relationships. List all group member names at the top of the diagram. Submit the Word document into the Canvas lab submission link.

**Part A**:

Consider the following relations for a database that keeps track of student enrollment in courses and the books adopted for each course:

STUDENT (StudID, Name, Major, Email)

COURSE (CourseID, Cname, Dept)

ENROLL (StudID, CourseID, Quarter, Grade)

BOOK\_ADOPTION (CourseID, Quarter, ISBN)

TEXT (ISBN, Title, Publisher, Author)

Draw a *relational schema diagram* specifying the primary and foreign keys for this schema. Include arrows to show referential integrity constraints. State any assumptions you are using.

Assumptions:

1. Students can enroll same course but in different quarter.
2. Students can enroll in multiple courses in the same quarter.

**Part B**:

Consider the following relations for a database that keeps track of student enrollment in courses and the books adopted for each course:

STUDENT (StudID, LName, FName, MI, Major, Email)

COURSE (CourseID, CName, Dept)

SECTION (SectionID,CourseID)

ENROLL (StudID, CourseID, SectionID, Grade)

BOOK\_ADOPTION (CourseID, SectionID, ISBN)

TEXT (ISBN, Title, Publisher, Author)

Draw a *relational schema diagram* specifying the primary and foreign keys for this schema. Include arrows to show referential integrity constraints. State any assumptions you are using.

Assumptions:

1. SECTION table will only hold values for courses that are offered in a particular semester.
2. Section ID value includes information that identifies with which semester this section is associated. Example: SectionID = U01\_Spr19
3. Multiple books in one quarter
4. Same book in different quarters.

**Part C**:

Consider the relations you created in Part B. If the SectionID does NOT indicate which semester this section is offered, what relation(s) do you need to add or change?

Draw a *relational schema diagram* specifying the primary and foreign keys for this schema. Include arrows to show referential integrity constraints. State any assumptions you are using.

Assumptions:

1.SECTION table will only hold values for courses that are offered in a particular semester.

2.Section ID value does NOT include information that identifies with which semester this section is associated. Example: SectionID = U01

3. semester should be indicated to the year of the course and semester.

4.Multiple books in one quarter

5. Same book in different quarters.

