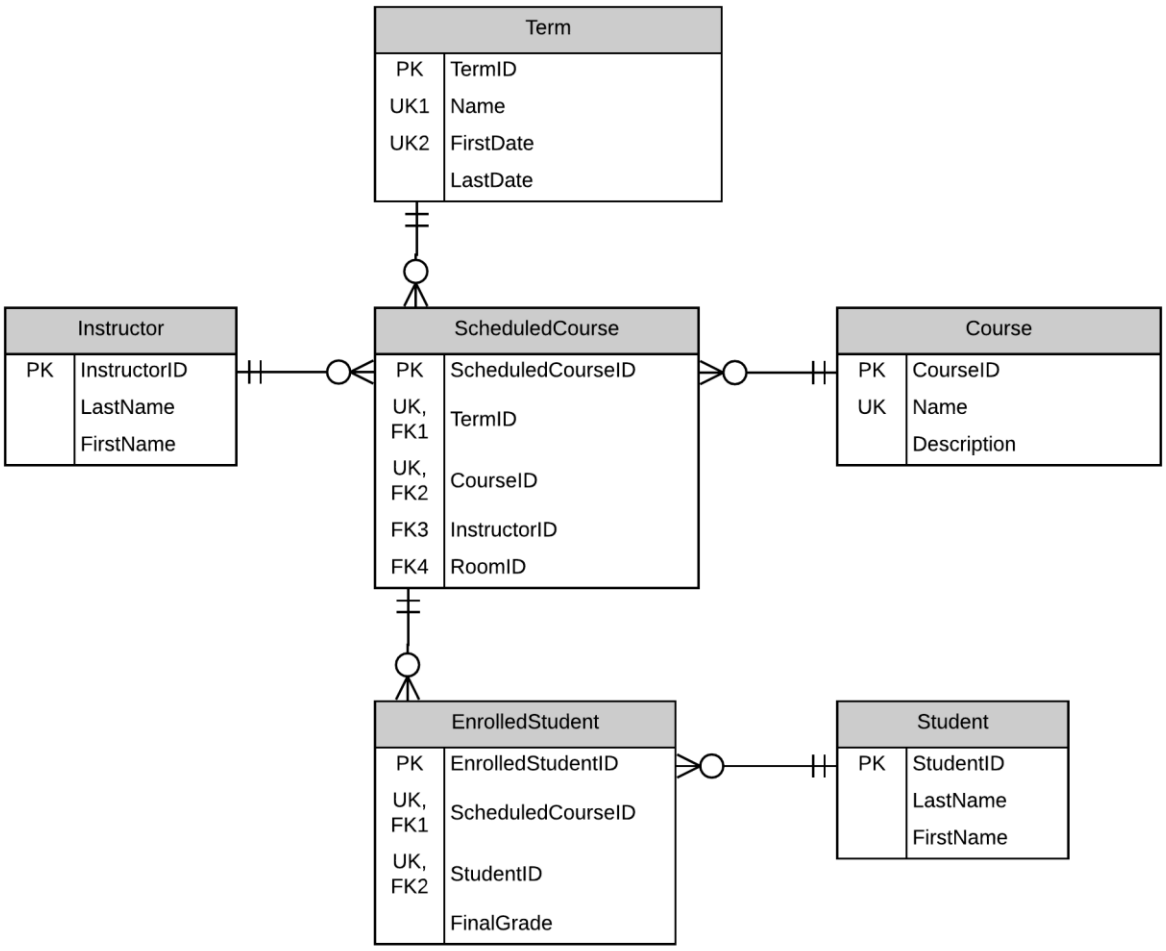
Exam 1 – Practice A

Database Design

The questions on this exam use tables from the below diagram. For the most part, the complete column specifications are unimportant for the purposes of this exam, but make note of the following:

- All columns in the database do not allow nulls. That is, they are defined with `NOT NULL`.
- All primary key columns and the referencing foreign key columns are of type `INT`.
- All `Name` columns (including `LastName` and `FirstName`) in all tables are of type `NVARCHAR`.
- The `FinalGrade` column in the `EnrolledStudents` table is of type `DECIMAL(5,2)`. This simply means it supports values from 0.00 to 100.00, such as 79.5 and 90.25.



1. Write a query to return all students enrolled in either CIS560 or CIS562 for the term of Fall 2018. "Fall 2018" will appear as a `Name` in the `Term` table, and "CIS560", for example, is the `Name` in `Course`.

   Required Result Columns

   `LastName` – The last name of the student as it appears in `LastName` of `Student`.
   `FirstName` – The first name of the student as it appears in `FirstName` of `Student`.
   `StudentID` – The identifier of the student as it appears in `StudentID` of `Student`.
   `CourseName` – The name of the course as it appears in `Name` of `Course`.

   Implementation Requirements

   The results should be sorted by `LastName`, then `FirstName`, and finally `StudentID` all in ascending order.

2. Write a query to return all instructors who are **not** teaching during the Fall 2018 term. "Fall 2018" will appear as the `Name` in the `Term` table to identify the Fall 2018 term.

   Required Result Columns
   `InstructorID` – The identifier of the instructor as it appears in `InstructorID` of `Instructor`.
   `LastName` – The last name of the instructor as it appears in `LastName` of `Instructor`.
   `FirstName` – The first name of the instructor as it appears in `FirstName` of `Instructor`.

   Implementation Requirements
   a. The solution may only use joins. That is, it should contain no subqueries.
   b. Each table in your solution should be referenced only once.
   c. The results should be sorted by `LastName`, then `FirstName`, and finally `InstructorID` all in ascending order.

3. Write a query as an alternate solution to *Question 2*. This solution **should use a subquery**, which can either be self-contained or correlated. All other requirements are the same as *Question 2*, including that **each table should be referenced only once**.