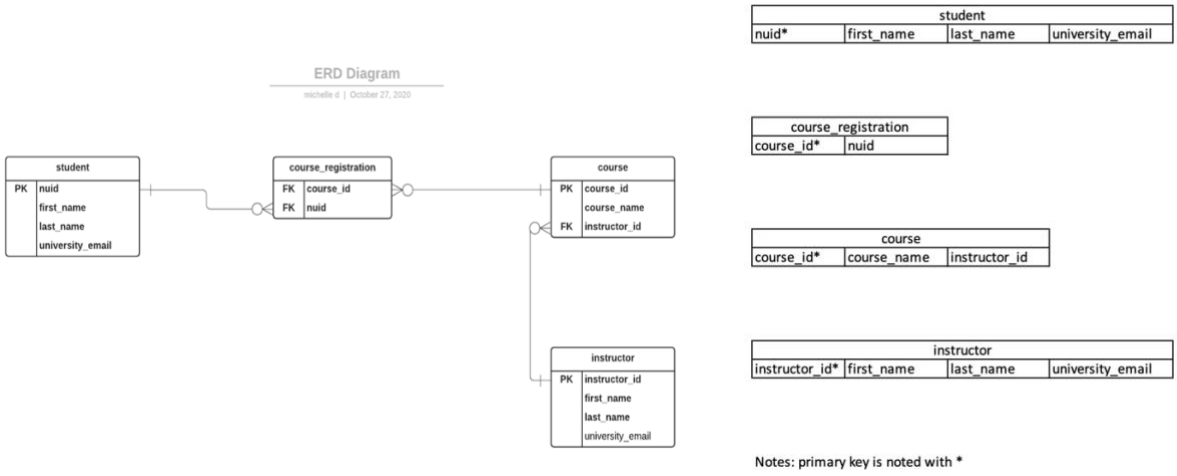

The ERD and relational schema are shown above. For a table to satisfy BCNF, other than the table should be in the third normal form, it also should satisfy for any dependency A → B, A should be a super key.

In the requirement, we defined for courses, they are uniquely identified by course_id. For example, both John and Jodi can teach the “Database” course, but the course_id is completely different from each other. Another example is if John teaches “Database” course in 2 consecutive semesters, the assigned course_id is completely different for different semesters. So, to sum up, course_id is always unique and never repeated.

So, we can see the schema satisfy the requirement. For the student table, nuid → first_name, nuid → last_name, nuid → university_email. For the course table, course_id → course_name, course_id → instructor_id. For the instructor table, instructor_id → first_name, instructor_id → last_name, instructor_id → university_email. Because for any dependency A → B, A is a super key, so it is proved to be BCNF.