

# Introduction to Database Systems(CS3700)

## Tutorial-3

### Topic: Tuple Relational Calculus(TRC)

Date: -24<sup>th</sup>-Sept-20

**Write TRC queries for the following data retrieval requests on the Academic Institute Relational Database Schema:**

1. List the id of courses with no prerequisites.
2. List of students (name and rollNo) that are not enrolled in any course in even semester of the year 2018.
3. List id of courses whose prerequisites do not have any prerequisites.
4. List of professors (name and empId) who have taught at least one course in both odd and even semester of 2018.
5. List id of courses that are not being taught in any semester.
6. Find the name and roll number of all the CSE department students who took CS3700 course in the odd semester of 2019 and passed the course with S grade.
7. Find the roll numbers of the students who have not taken any course taught by their advisors.
8. Find the name of the senior-most professor from the Civil Engineering department.
9. Find the names of the CSE department Professors who have taught a course at least 2 times, along with the course id.
10. Find the id and name of all the courses that are taught in CS34 or CS36 along with the names of the faculties who taught those courses in the odd semester of 2019.
11. Find the id and name of all the departments which offer only 4 credits courses.
12. Find the name and rollNo of all the CSE students who never scored a grade lower than D.
13. Find the names of the departments whose HOD has taught exactly two courses in the odd semester of 2019, along with the name of the HOD.

#### Example Relational Scheme with RICs shown

student (rollNo, name, degree, year, sex, deptNo, advisor)

department (deptId, name, hod, phone)

professor (empId, name, sex, startYear, deptNo, phone)

course (courseId, cname, credits, deptNo)

enrollment (rollNo, courseId, sem, year, grade)

teaching (empId, courseId, sem, year, classRoom)

preRequisite (preReqCourse, courseId)