

Basic use of SQL (that you should have learnt)

A few examples of using SQL to retrieve data from the university:

1. Find the names of all instructors.

```
select name from instructor;
```

2. Find the instructor names and the ID of courses they taught for all instructors who have taught some courses.

```
select name, course_id from instructor, teaches  
where instructor.ID=teaches.ID;
```

3. Find the instructor names and the ID of courses they taught for all instructors in the Computer Science department who have taught some courses.

```
select name, course_id from instructor, teaches  
where instructor.ID=teaches.ID and dept_name='Computer Science';
```

4. Find the ID of all courses taught in Semester A 2015 but not in Semester B 2014.

```
(select course_id from section where semester='A' and year=2015)  
except  
(select course_id from section where semester='B' and year=2014);
```

5. Find the average salary of instructors in the Computer Science department.

```
select avg(salary) from instructor where dept_name='Computer Science';
```

6. Find the average salary of instructors in each department.

```
select dept_name, avg(salary) from instructor group by dept_name;
```

7. Display a list of all students, with their *ID*, *name*, *dept_name* and *tot_cred*, along with the courses that they have taken.

```
select * from student natural join takes;
```

How to include those students who have not taken any courses in the list?

```
select * from student natural left outer join takes;
```

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