Course Name: **A Level (1st Sem)** Subject : **Introduction to DBMS**
Topic: **ERD – Example Contd. (Part 10)** Date: **16-Apr-2020**

ERD – Example

Que1 A college contains many departments. Each department can offer any number of courses. Many instructors can work in a department. An instructor can work only in one department. For each department there is a Head. An instructor can be head of only one department. Each instructor can take any number of courses. A course can be taken by only one instructor. A student can enroll for any number of courses. Each course can have any number of students.
Draw an ER diagram for this schema that takes into account all the assertions given.

Ans.
As we all know that ERD comprises of entities, attributes and relationship among entities.

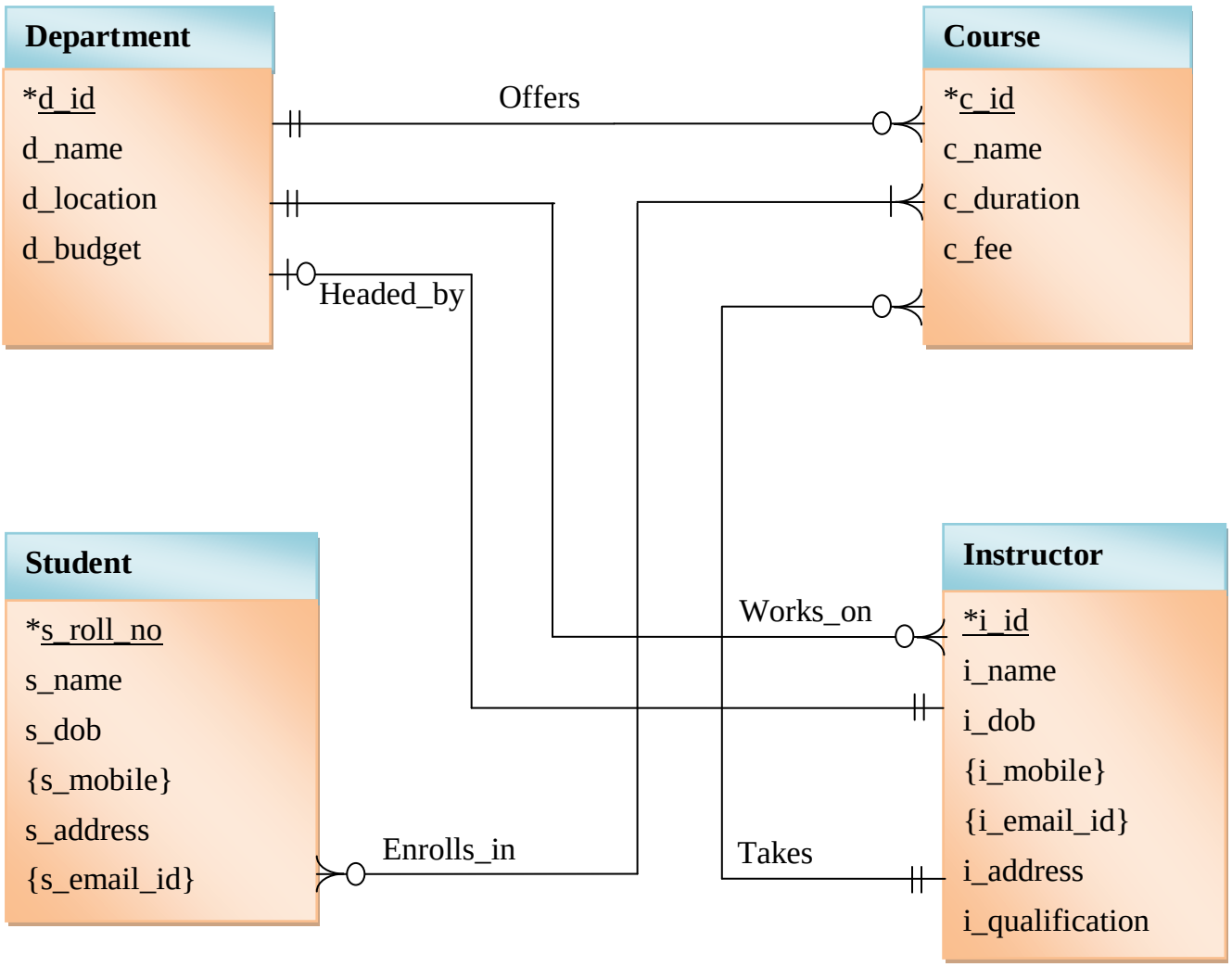
Therefore, the following four entity set and their attributes are identified:

1. **Department:** d_id, d_name, d_location, d_budget
2. **Course:** c_id, c_name, c_duration, c_fee
3. **Student:** s_roll_no, s_name, s_dob, s_mobile, s_address, s_email_id
4. **Instructor:** i_id, i_name, i_dob, i_mobile, i_email_id, i_address, i_qualification

The following relationships set and participation constraints are identified:

Relationships types and Entities involved in	**Participation Constraints**
• **One** *Department* Offers **Many** *Courses*	Total: Course Partial: Department
• **Many** *Instructors* Works_on **One** *Department*	Total: Instructor Partial: Department
• **One** *Department* Headed_by **One** *Instructor*	Total: Department Partial: Instructor
• **One** *Instructor* Takes **Many** *Courses.*	Total: Course Partial: Instructor
• **Many** S*tudents* Enrolled_in **Many** *Courses*	Total: Student Partial: Course

ERD using Crow's Foot Notations



Exercise:

Que Consider the following schema:

CUSTOMER(id, name, address)

ORDER(ordernbr, date, id)

ORDERLIST(ordernbr, barcode, company, quantity)

PRODUCT(barcode, description)

VENDOR(vendornbr, company, rating)

VENPRODLINK(barcode, vendornbr, price)

Construct an E-R diagram for the above schema; specify keys, mapping cardinalities, participation constraints (if necessary).