**Lab 3: Entity Relationship Diagram**

**Draw an entity relationship diagram then transform it to relation data model for each of the following situation. When you draw the ERD, add the attributes that you think necessary for each entity in the model.**

**Exercise 2**: You are required to create a conceptual data model of the data requirements for a company that specializes in IT training. **The Company** has 30 **instructors** and can handle up to 100 **trainees** per training session. The Company offers five advanced **technology courses**, each of which is taught by a teaching team of two or more instructors. Each instructor is assigned to a maximum of two **teaching teams** or may be assigned to **do research**. Each trainee undertakes one advanced technology course per training session.

Entities:

Company

Instructor

Trainee

Training Session

Technology Course

Teachching teams

Research

Relations:

1 Company – has- 30 Instructor

1 Company – has – 5 Technology Course

1 Technology Course – teaching by – 2>= Instructor

1 Instructor – be Assigned to – 2>= Teaching teams | Doing Research

1 Instructor – handle – <=100 Trainee

1 Training Session – has – <=100 Trainee

1 Trainee – take – 1 Technology Course

**Exercise 3**: 300 **employees** of a **company** are organized into different **departments.** For **each employee**, we have his social security number, name, address, sex, birthdate, phone and email. **Each department** has a name, a role and a head (who is also an employee). Note that **each employee** works for only one ***department*** *at* ***a time*** *but he could change from one department to another department****. Each time*** *he works for* ***a department****,* ***the company*** *signs* ***a contract*** *.****Each contract*** *salary, start date and end date***. Each department** handle a number of **projects** (**each project** is handled by only one **department**). **Each project** has a name, start date, end date, a project manager and a number of employees who work on it. Note that **an employee** could work on different **projects** with a specified number of **hour. Each employee** may have a number of **dependents**. For **each dependent,** we keep track of their name, sex, birthdate and relationship to the employee.

Entity:

- **employees**

- **company**

**- departments**

**- contract**

**- projects**

**- hour**

**- dependents**