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[Home](#) » [Posts](#) » ER Diagram Examples – Questions

## ER Diagram Examples – Questions

By [admin](#)

December 8, 2015 |

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## ER Diagram Examples

### Some ER Diagram Examples :

#### Question 1 :

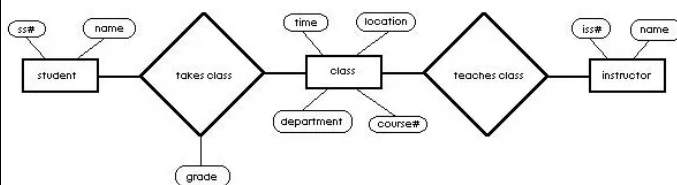
(a) Construct an E-R diagram for the registrar's office. Document all assumptions you make about the mapping constraints.

#### Assumptions:

- A class meets only at one particular place and time. This diagram does not attempt to model a class meeting at different places or at different times
- There is no guarantee that the database does not have two classes meeting at the same place and time
- Each class has a unique instructor

(b) Construct appropriate tables for the ER Diagram

Solution (a):



Solution (b) :

Student(SS#, name)

Class(Course#, time, location, department)

Instructor(Iss#, name)

Teaches-class(Iss#, Course#, time, location)

Takes-class (SS#, Course#, time, location, grade)

#### Question 2 :

(a) A university registrar's office maintains data about the following entities:

- (a) courses, including number, title, credits, syllabus, and prerequisites;
- (b) course offerings, including course number, year, semester, section number, instructor(s), timings, and classroom;
- (c) students, including student-id, name, and program; and
- (d) instructors, including identification number, name, department, and title.

Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be that you make about the mapping constraints.

(b) Construct appropriate tables for the above ER Diagram :

Answer (a):

In the answer given here, the main entity sets are student, course, course-offering, and instructor. The entity set course-offering is a weak entity set.

a. a class meets only at one particular place and time. This E-R diagram cannot model a class meeting at different places at different times.

b. There is no guarantee that the database does not have two classes meeting at the same place and time.

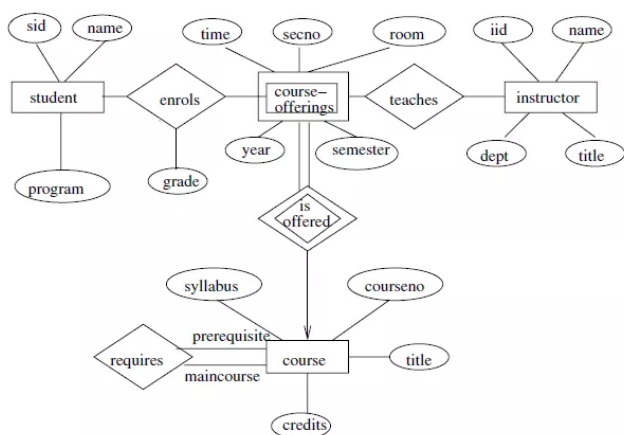


Figure 2.3 E-R diagram for a university.

Solution (b):

University registrar's tables:

student (student-id, name, program)

course (courseno, title, syllabus, credits)

course-offering (courseno, secno, year, semester, time, room)

instructor (instructor-id, name, dept, title)

enrols (student-id, courseno, secno, semester, year, grade)

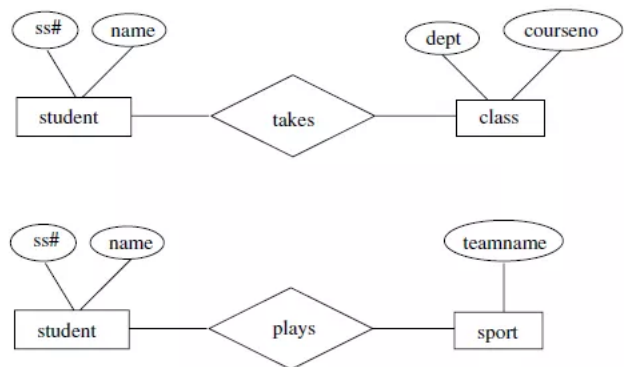
teaches (courseno, secno, semester, year, instructor-id)

requires (maincourse, prerequisite)



Question 3 : Consider an E-R diagram in which the same entity set appears several times. Why is allowing this redundancy a bad practice that one should avoid whenever possible?

Answer: By using one entity set many times we are missing relationships in the model. For example, in the following E-R diagram, the students taking cl:



Question 4 :

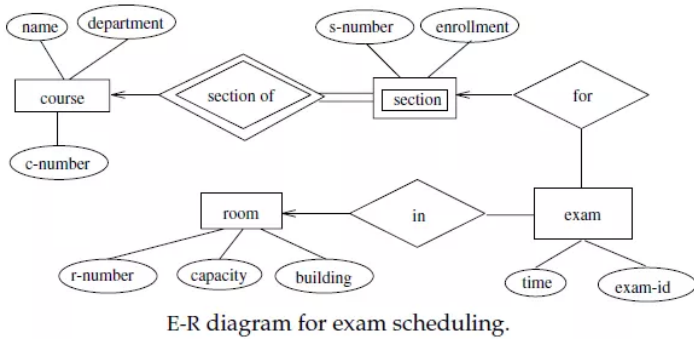
(a) Consider a university database for the scheduling of classrooms for final exams. This database could be modeled as the

- course with attributes name, department, and c-number
- section with attributes s-number and enrollment, and dependent as a weak entity set on course
- room with attributes r-number, capacity, and building

Show an E-R diagram illustrating the use of all three additional entity sets listed.

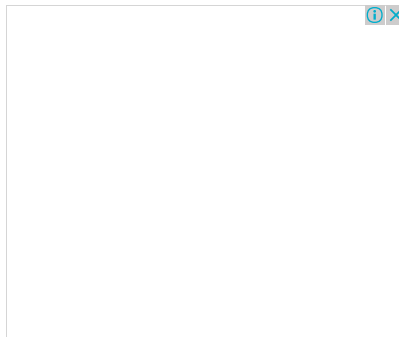
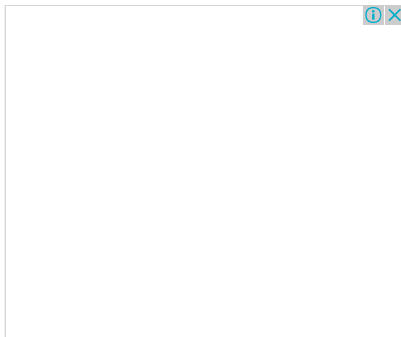
(b) Explain what application characteristics would influence a decision to include or not to include each of the additional

Answer (a):



Answer (b) :

The additional entity sets are useful if we wish to store their attributes as part of the database. For the course entity set, we have chosen to include

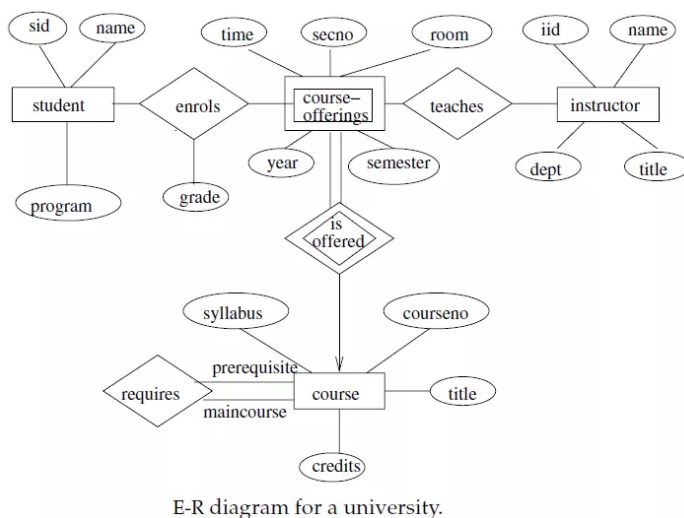


**Question 5: A university registrar's office maintains data about the following entities:**

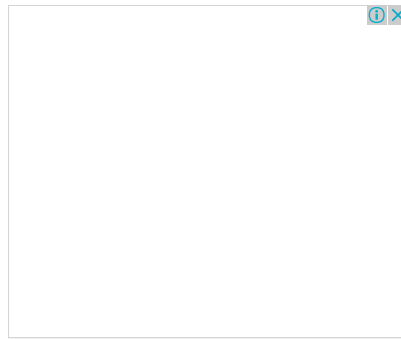
1. courses, including number, title, credits, syllabus, and prerequisites;
2. course offerings, including course number, year, semester, section number, instructor(s), timings, and classroom;
3. students, including student-id, name, and program;
4. instructors, including identification number, name, department, and title.

**Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be**

Answer :



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Reference : <http://www.cs.umd.edu/class/spring2003/cm424-0401/HW1answers.htm>

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### Incoming search terms:

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- ER diagram for university?
- course detail er diagram
- dbms er diagram question
- university registers office maintain data allowing in following entity in er diagram
- A university registrar's office maintains data about the following entities: i courses including number title credits syllabus and prerequisites; ii course offerings including course number year semester section number instructor(s) timings and classroom;
- ER DIAGRAM FOR REGISTRATION UNIVERSITY OFFICE

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