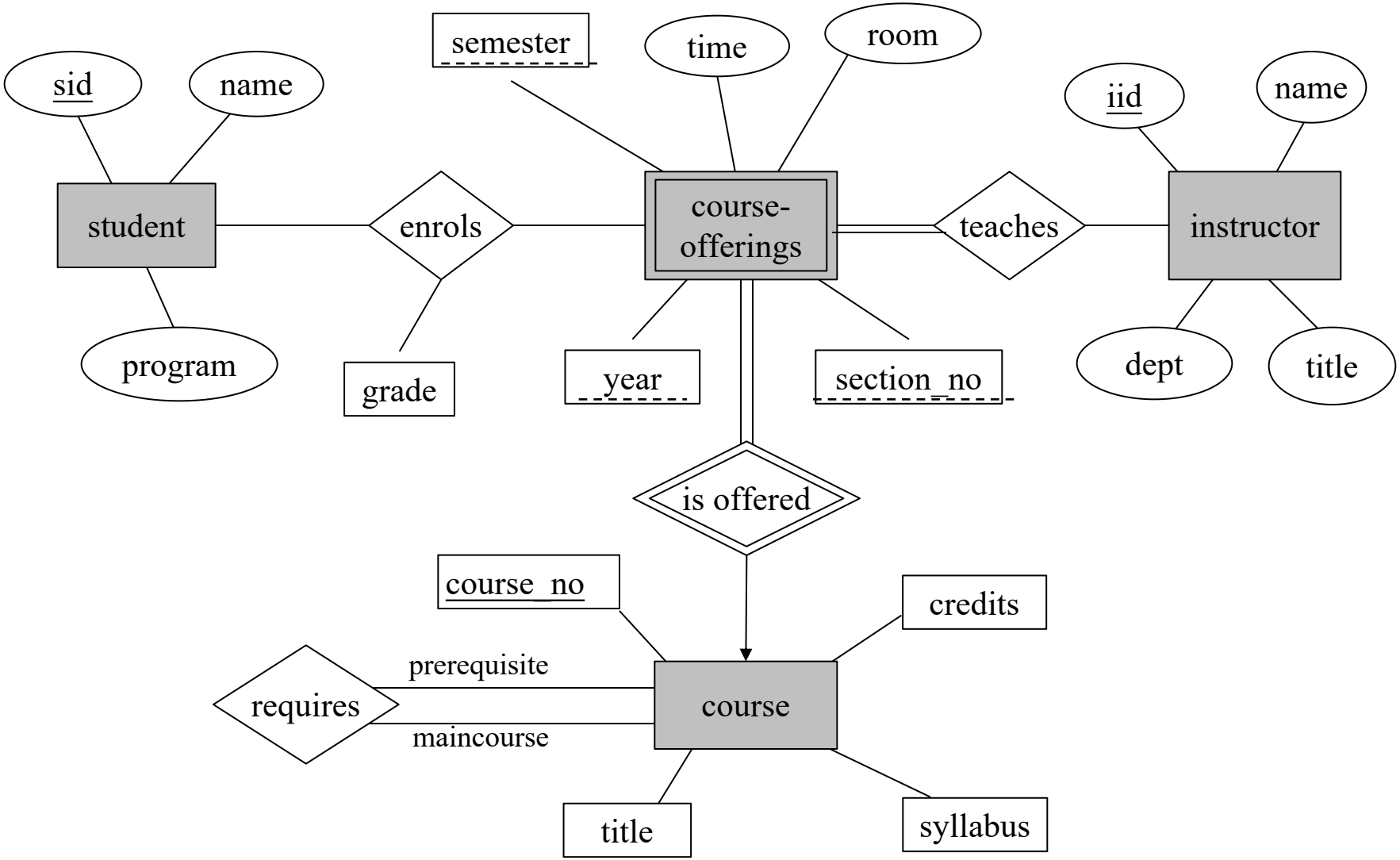
Tutorial 2

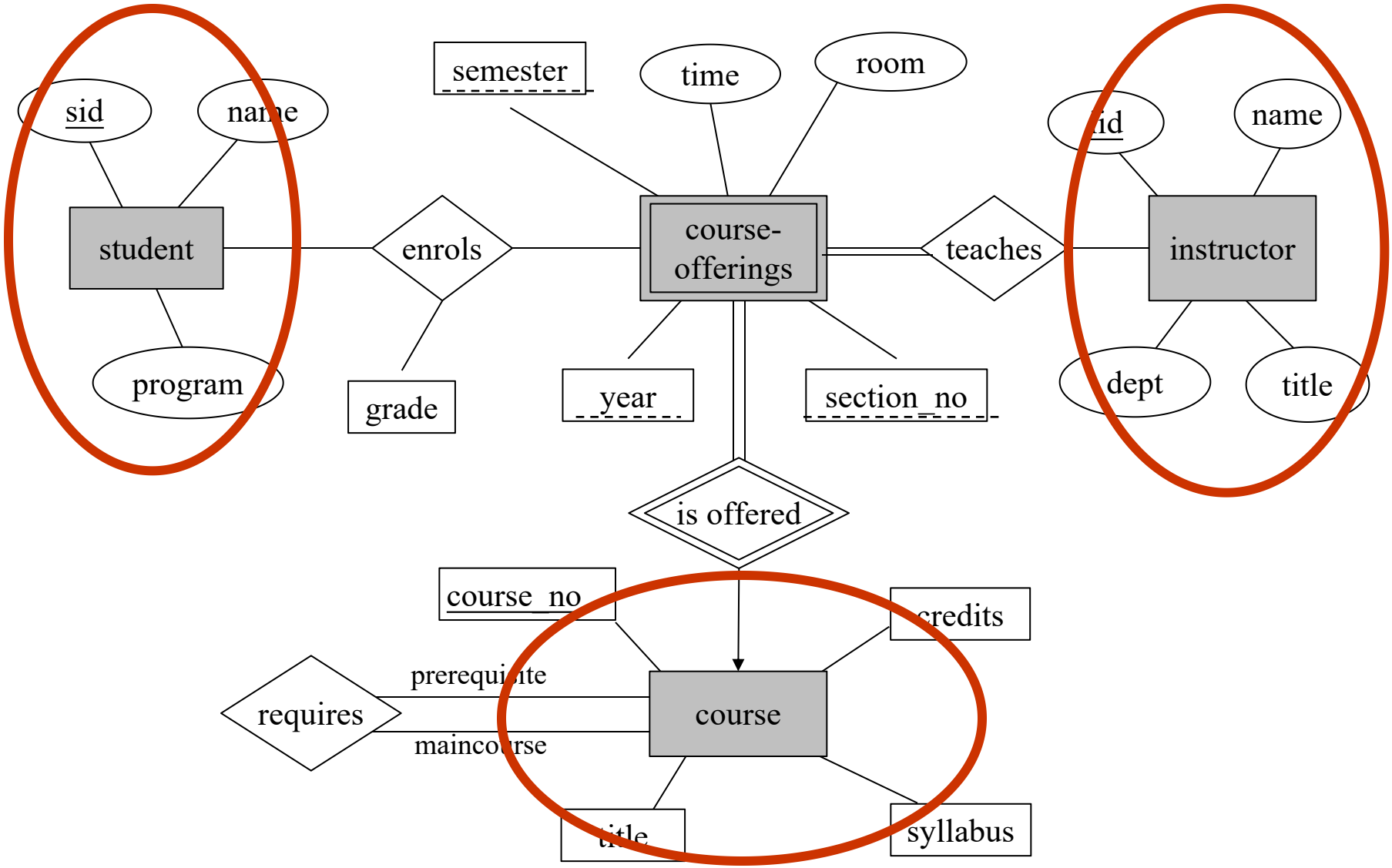
Relational Data Model

Exercise: Convert E-R Diagram into tables



E-R diagram for a university.

Entities (Not Weak)



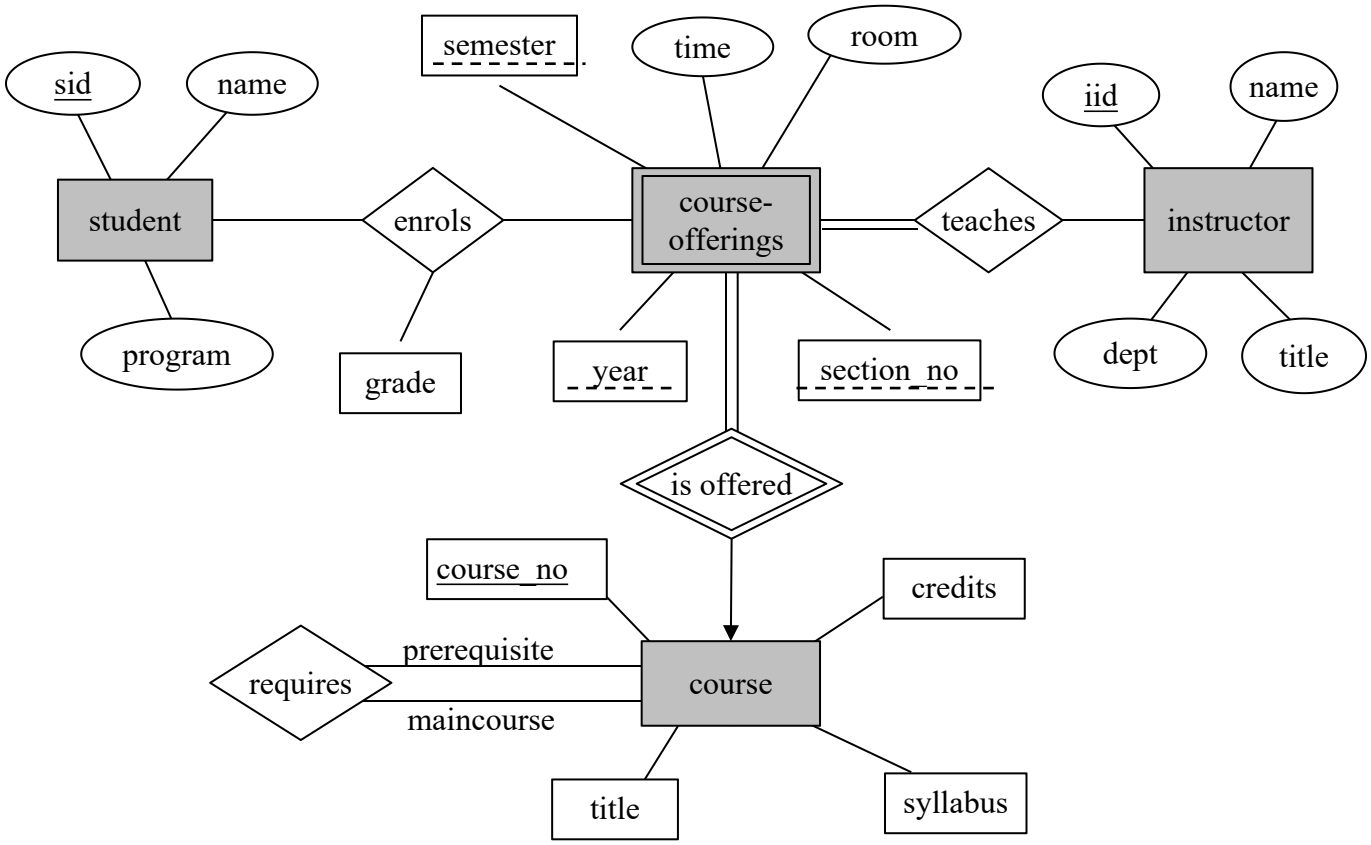
E-R diagram for a university.

Tables of Entities (Not Weak)

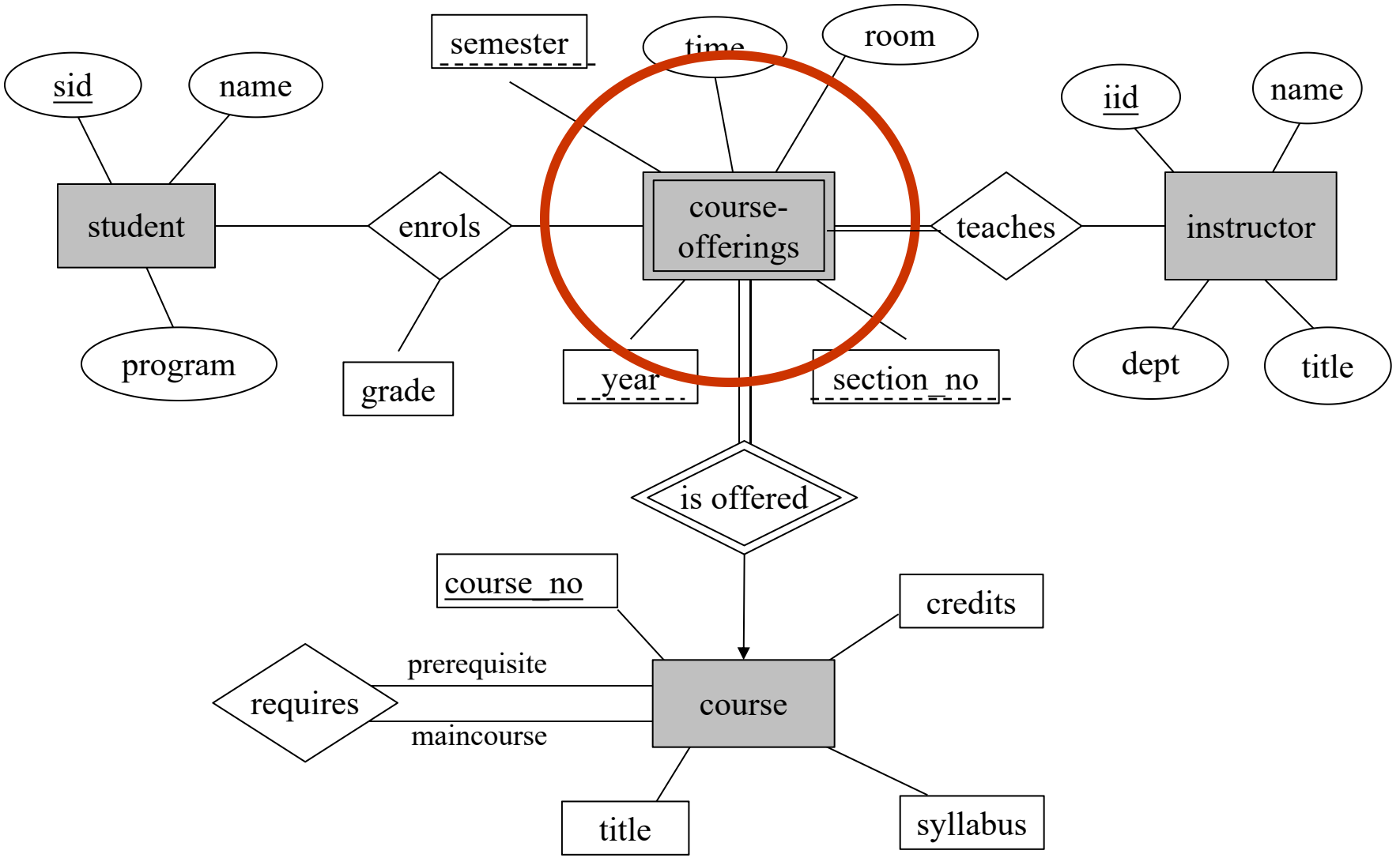
student (sid, name, program)

course (course_no, title, syllabus, credits)

instructor (iid, name, dept, title)



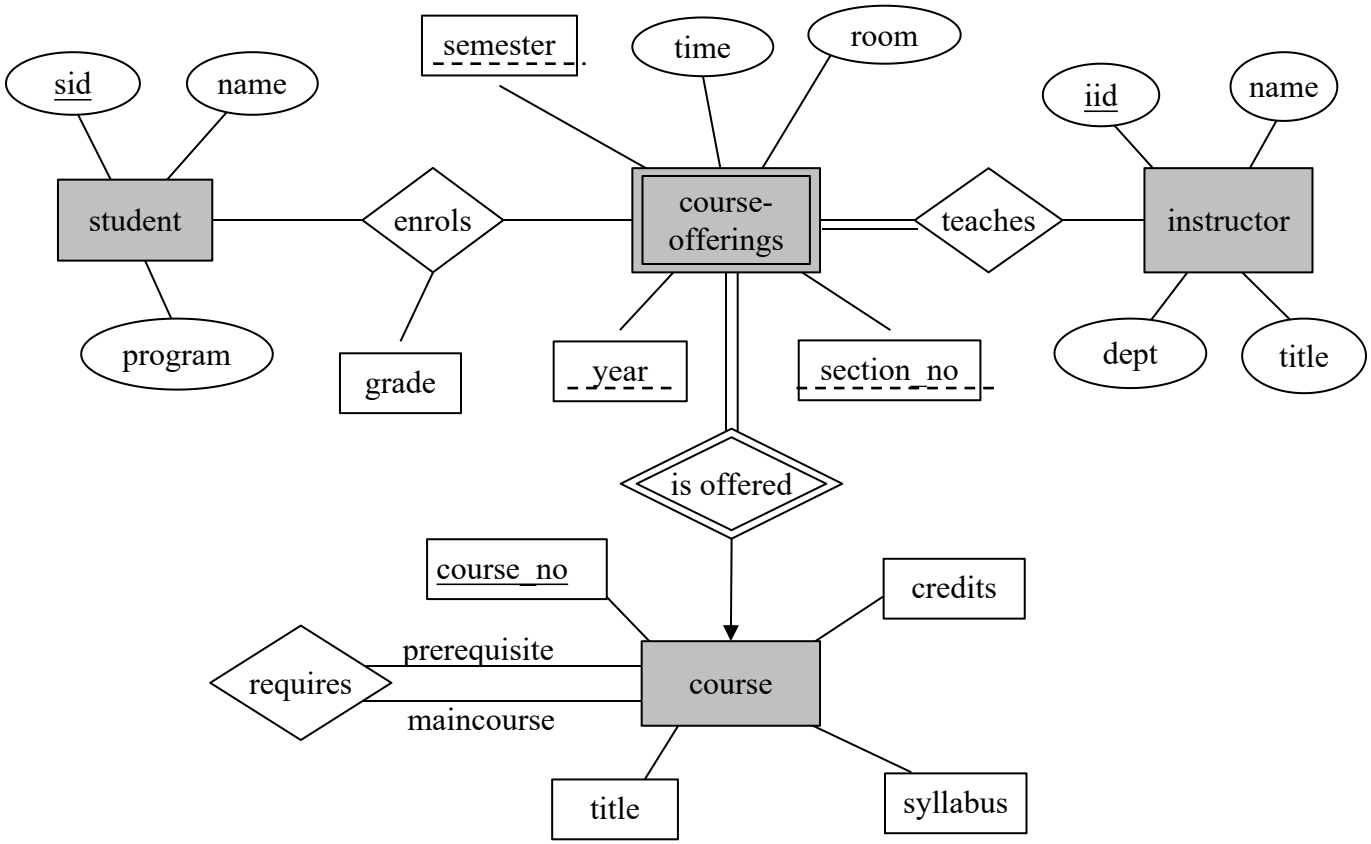
Weak Entity



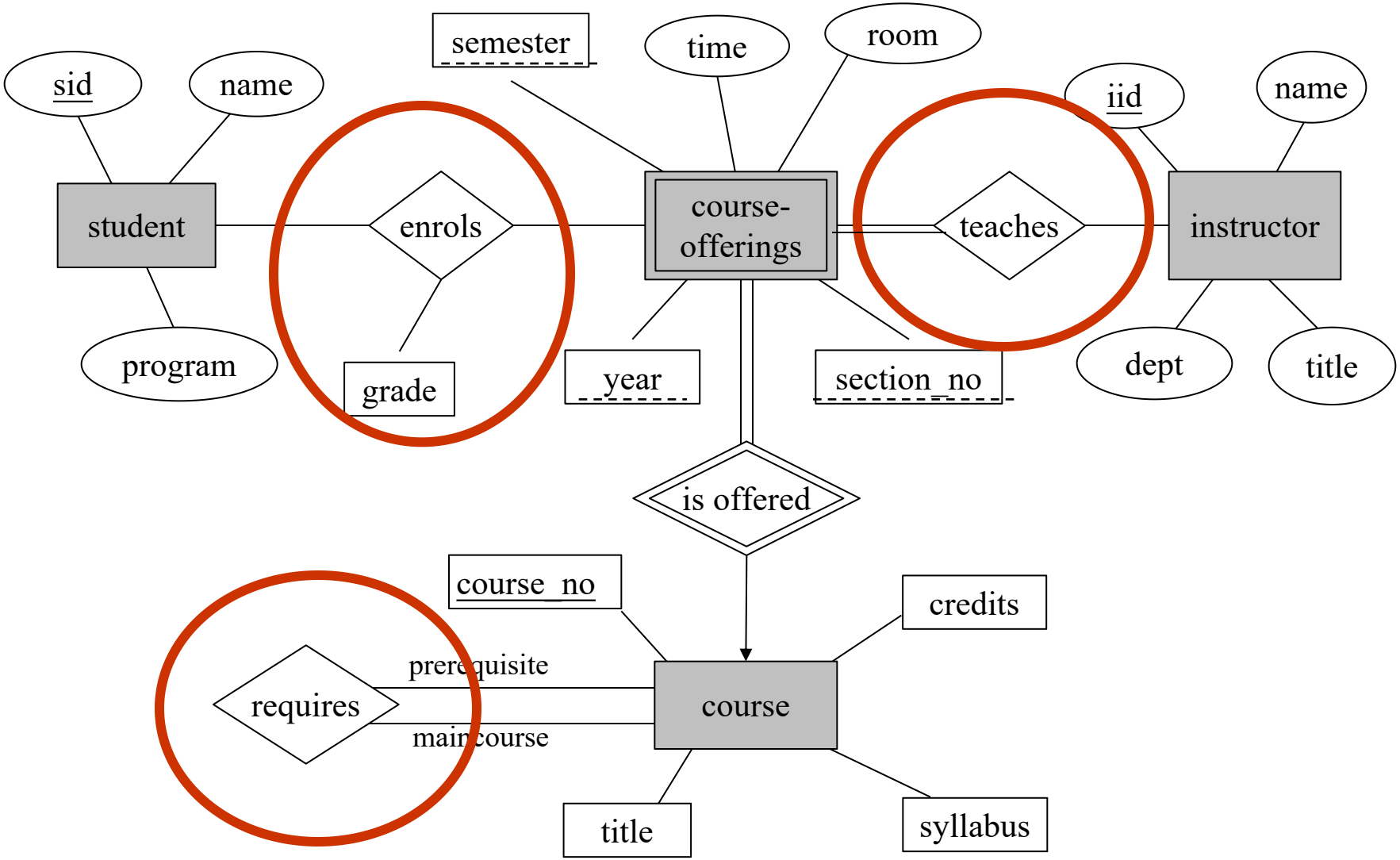
E-R diagram for a university.

Table of Weak Entity

course-offerings (course_no, section_no, year, semester, time, room)



Relationships (without weak entities)



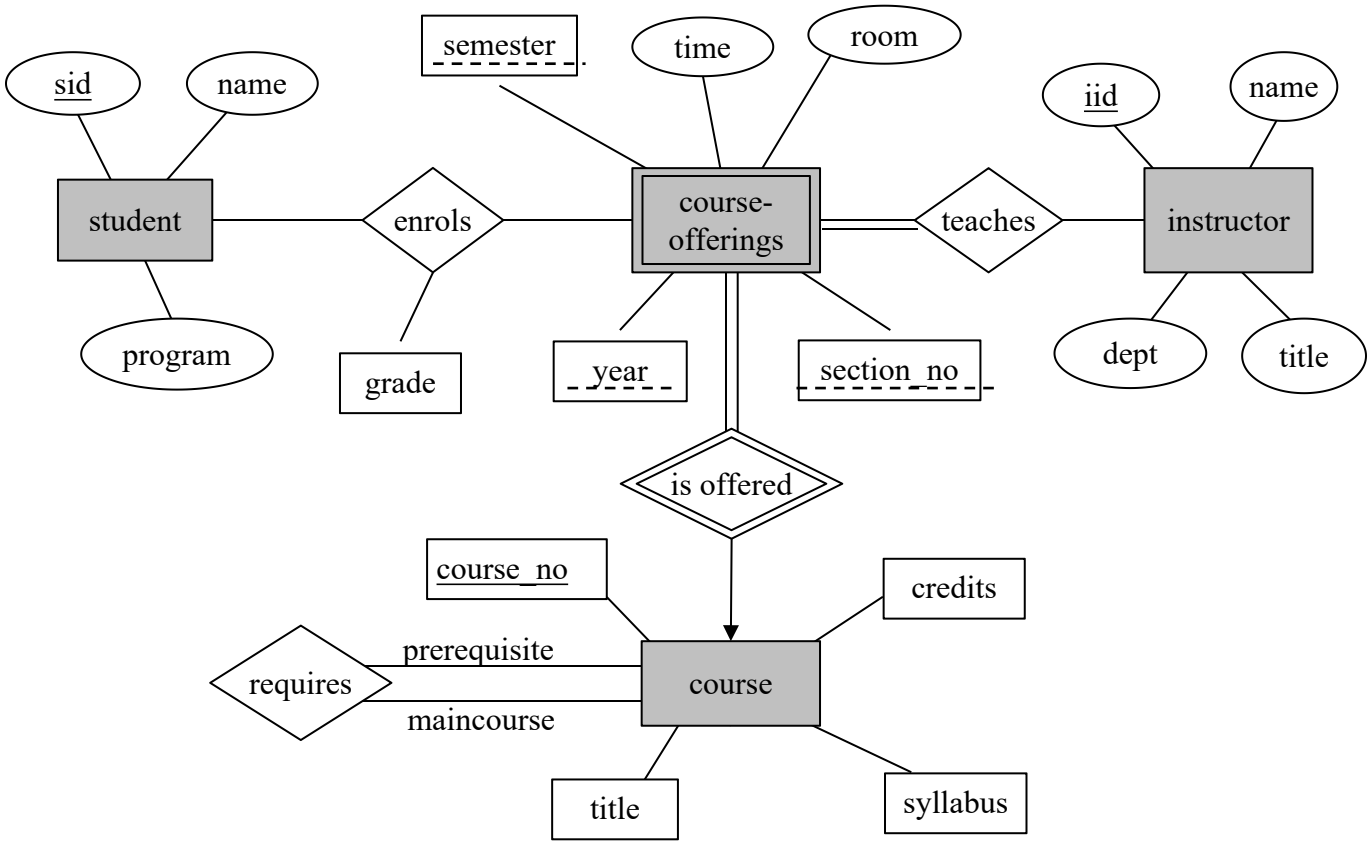
E-R diagram for a university.

Tables of Relationships (without weak entities)

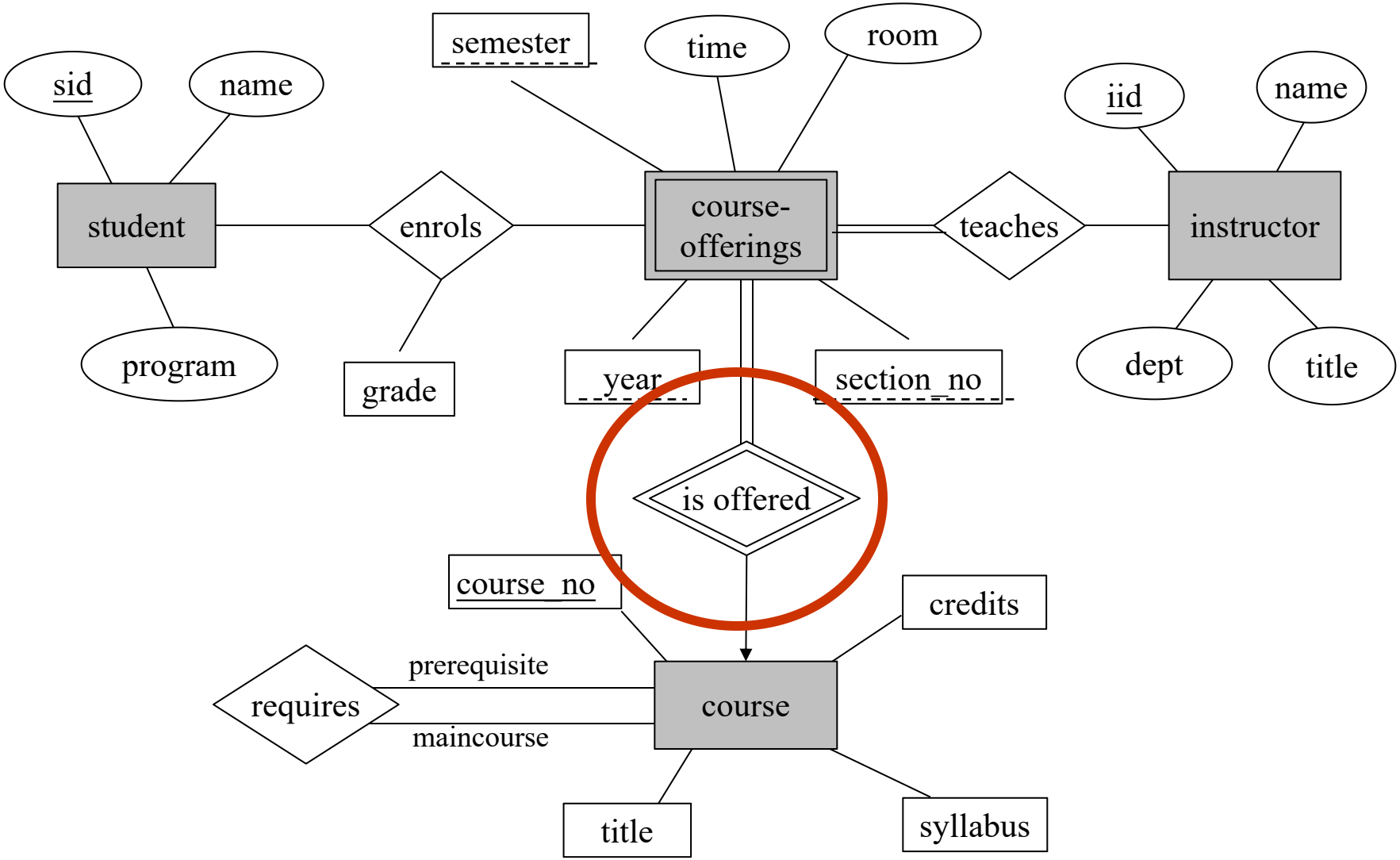
enrols (sid, course_no, section_no, semester, year, grade)

teaches (iid, course_no, section_no, semester, year)

requires (main_course_no, prerequisite_no)



Relationship with Weak Entity



E-R diagram for a university.

Table of Relationship with Weak Entity

- There is no extra table for the relationship between a weak entity and its “owner/strong” entity.
- The relationship is already present in the table for the weak entity.
  - *course-offerings (courseno, secno, year, semester, time, room)*

- If the relationship between A and B is many-to-one
  - Include the key of B into the table of A
- If the relationship between A and B is one-to-one
  - Include either A or B’s key into the other’s table

Key

- Superkey – Uniquely identify the tuples in the relation
- Candidate Key (also called key) – A minimal superkey (cannot remove any attribute to make it as a superkey)
- Primary Key – A candidate key used in the relation to identify tuples