

# ER Diagram

Group 24:

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## Entities:

### 1. Student:

- a. student\_id (primary key)
- b. cgpa
- c. courses
- d. email
- e. first\_nm
- f. last\_nm
- g. password

### 2. Course:

- a. course\_id (primary key)
- b. syllabus
- c. room
- d. course\_nm
- e. meeting\_time
- f. Instructor\_id (foreign key)
- g. objectives

### 3. Program:

- a. program\_id (primary key)
- b. program\_nm
- c. objectives

### 4. Exam:

- a. exam\_id (primary key)
- b. exam\_nm
- c. date
- d. room
- e. duration
- f. questions
- g. course\_id (foreign key)

- h. instructor\_id (foreign key)
- 5. Exam Result:
  - a. result\_id (primary key)
  - b. exam\_id (foreign key)
  - c. student\_id (foreign key)
  - d. score
- 6. Assessment:
  - a. assessment\_id (primary key)
  - b. assessment\_nm
  - c. due\_date
  - d. tasks
  - e. course\_id (foreign key)
  - f. instructor\_id (foreign key)
- 7. Assess Result:
  - a. result\_id (primary key)
  - b. assess\_id (foreign key)
  - c. student\_id (foreign key)
  - d. score
- 8. Instructor:
  - a. instructor\_id (primary key)
  - b. courses
  - c. email
  - d. last\_nm
  - e. first\_nm
- 9. Message
  - a. message\_id (primary key)
  - b. instructor\_id (foreign key)
  - c. student\_id (foreign key)
  - d. content
  - e. timestamp
- 10. Admin
  - a. admin\_id (primary key)
  - b. email
  - c. password

## Relations:

1. Student-Course (M:N):  
A student can enroll in multiple courses and a course can have multiple enrolled students.
2. Course-Program (M:1):

Many courses belong to a program and a program can have multiple courses.

3. Course-Exam (1:M):  
A course can have multiple exams but an exam belongs to only one course.
4. Exam-Exam Result (1:1):  
An exam can only have one result and a result can belong to only one exam.
5. Student-Exam Result (1:M):  
A student can view multiple exam results but an exam result can only belong to a student.
6. Admin-Course (M:N):  
An admin may modify multiple courses and a course can be modified by multiple admins.
7. Student-Assess Result (1:M):  
An assessment can only have one result and a result can belong to only one assessment.
8. Course\_Assessment (1:M):  
A course can have multiple assessment but an assessment belongs to only one course.
9. Assessment-Assess Result (1:1):  
An assessment can only have one result and a result can belong to only one assessment.
10. Instructor-Course (M:N):  
An instructor can modify multiple courses and a course can be modified by multiple instructors.
11. Instructor-Message (1:M):  
An instructor can send multiple messages but a message can be sent by only one instructor.
12. Student-Message (M:N):  
A student can receive multiple messages and a message can be received by multiple students.

