

Palestine Technical University – Kadoorie College of Engineering and Technology Department of Computer Systems Engineering

Course name:

# Software Engineering

Project title:

DEVELOPING A CENTRALIZED COURSE PORTAL FOR ACADEMIC CENTERS IN PALESTINE

By:

# Abrar Arman - 202110760

# Maysam Rashed - 202110544

# Mayar Qasarwa - 202110541

# Shahd Qalalwa - 202110543

# Azza Eid – 202110543

Supervisor:

# Dr. Osama Hamed

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**Chapter 1:Introduction**

**--in progress**

**Abstract:**

**--at the end of project**

**Chapter 2: The Entity Relationship Data Model**

**2-1-1 Entities:**

To make our database ER diagram simpler to understand, we have divided **the entities** into several functional groups:

* **User Management:** Students, UserAccounts, Admins
* **Course Management**: Courses, Centers, CourseMaterials, CourseSchedule
* **Enrollment & Feedback:** Enrollments, CourseReviews, Feedback
* **Scheduling & Events:** CourseSchedule, Events
* **Notifications & Communications:** Notifications
* **Financial Transactions:** Payments, Wishlist

**2-1-2 Entities Description:**

**Students:** Represents individuals enrolled in the academic center. Holds personal information, academic major, and enrollment status.

**Courses:** Contains details of courses offered, including name, associated department, credit value, and related materials like syllabus.

**Centers:** Details the centers or departments within the academic center, including the courses they offer and a bio for the center.

**Enrollments:** Tracks the registration of students in courses, including the semester, grades received, and current status.

**CourseSchedule:** Manages when and where courses are held, detailing the weekly schedule and location.

**CourseReviews:** Allows students to rate and comment on courses, providing feedback and insights for future students.

**UserAccounts:** Manages login credentials and roles for users of the database system, including last login tracking.

**Wishlist:** Enables students to list courses they wish to take in the future, helping with planning and course demand forecasting.

**Notifications:** Sends messages to users, such as reminders or alerts, and tracks whether they have been read.

**Payments:** Handles financial transactions related to course enrollments, including payment amounts and methods.

**Feedback:** Collects general feedback from users on various subjects related to the academic center.

**Admins:** Represents administrative staff, with their contact information and role within the academic center.

**CourseMaterials:** Stores information about educational content provided for courses, including type and upload date.

**Events:** Details events hosted by the academic center, including descriptions and scheduling.

**2-2 Entities & Attributes:**

1. **Students**
   * StudentID (PK)
   * FirstName
   * LastName
   * Email
   * PasswordHash
   * Major
   * EnrollmentStatus
2. **Courses**
   * CourseID (PK)
   * CourseName
   * CenterID (FK)
   * Credits
   * Description
   * Syllabus
   * ScheduleID (FK)
3. **Centers**
   * CenterID (PK)
   * Name
   * Email
   * Bio
   * CoursesTaught
4. **Enrollments**
   * EnrollmentID (PK)
   * StudentID (FK)
   * CourseID (FK)
   * Semester
   * Grade
   * Status
5. **CourseSchedule**
   * ScheduleID (PK)
   * CourseID (FK)
   * DayOfWeek
   * StartTime
   * EndTime
   * Location
6. **CourseReviews**
   * ReviewID (PK)
   * CourseID (FK)
   * StudentID (FK)
   * Rating
   * Comment
   * DatePosted
7. **UserAccounts**
   * UserID (PK)
   * Username
   * PasswordHash
   * LastLogin
   * Role
8. **Wishlist**
   * WishlistID (PK)
   * StudentID (FK)
   * CourseID (FK)
   * DateAdded
9. **Notifications**
   * NotificationID (PK)
   * UserID (FK)
   * Message
   * DateSent
   * IsRead
10. **Payments**
    * PaymentID (PK)
    * EnrollmentID (FK)
    * Amount
    * DatePaid
    * PaymentMethod
11. **Feedback**
    * FeedbackID (PK)
    * UserID (FK)
    * Subject
    * Message
    * DateReceived
12. **Admins**
    * AdminID (PK)
    * FirstName
    * LastName
    * Email
    * Role
13. **CourseMaterials**
    * MaterialID (PK)
    * CourseID (FK)
    * Title
    * Description
    * FileType
    * UploadDate
14. **Events**
    * EventID (PK)
    * Title
    * Description
    * StartDate
    * EndDate

**2-3 Relationships:**

* **Students** to **Enrollments**: A student can have multiple enrollments.
* **Courses** to **Enrollments**: A course can have multiple students enrolled.
* **Centers** to **Courses**: A center offers multiple courses.
* **CourseSchedule** to **Courses**: Each course has a schedule.
* **CourseReviews** to **Courses**: A course can have multiple reviews.
* **CourseReviews** to **Students**: A student can write multiple reviews.
* **UserAccounts** to **Students/Admins**: A user account is linked to a student or an admin.
* **Wishlist** to **Students**: A student can have multiple wishlist entries.
* **Notifications** to **UserAccounts**: A user account can receive multiple notifications.
* **Payments** to **Enrollments**: Each enrollment has a payment record.
* **Feedback** to **UserAccounts**: A user can submit multiple feedback entries.
* **CourseMaterials** to **Courses**: A course can have multiple materials.
* **Events**: Standalone entity for events.