# Project Proposal Group 6: Student Course Registration System

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**Group Name: Archive Innovators**

## 1. Project Description

Our team will develop a **Student Course Registration System** that allows students to register for university courses and administrators to manage course offerings. This system will fulfill the project requirements while striving for simplicity. Our project's goal is to provide a user-friendly and effective student course registration system that guarantees data integrity, expedites the registration process, and makes it easier for administrators to manage courses.

## 2. Application Overview

### 2.1 System Users

1. Students: Regular users who can view and register for courses

2. Administrators: Users who can manage course offerings and student enrollments

### 2.2 Core Functionalities

#### Student Features:

* User authentication
* View available courses
* Register for courses
* Drop courses
* View personal schedule

#### Administrator Features:

* Manage courses and sections
* View student enrollments
* Override registration restrictions
* Generate basic reports

## 3. Technical Specifications

### 3.1 Database Design

We will implement a MySQL database with the following 12 tables:

1. Users - Authentication information

2. UserRoles - Admin/Student roles

3. Students - Student details

4. Departments - Academic departments

5. Courses - Course information

6. Prerequisites - Course prerequisites

7. Sections - Course offerings per semester

8. Faculty - Instructor information

9. Enrollments - Student registrations

10. Semesters - Term information

11. Buildings - Campus buildings

12. Classrooms - Room information

### 3.2 Database Features

* + Primary and foreign keys
  + Unique constraints
  + Not null constraints
  + Basic views for common queries
  + Simple triggers for enrollment updates
  + Indices on frequently queried fields
  + Basic stored procedures

### 3.3 Technology Stack

* + Database System: MySQL
  + Backend: Java with JDBC
  + Frontend: JavaFX (desktop application)
  + Version Control: GitHub
  + Project Management: Jira

## 4. Project Timeline

### Phase 1: Planning (Weeks 1-2)

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Assigned To** | **Deadline** | **Dependencies** |
| Project requirements gathering | All Members | 25-Feb | None |
| Database schema design | All Members | 28-Feb | Requirements |
| ER diagram creation | All Members | 5-Mar | Schema design |
| Database setup and initial scripts | All Members | 7-Mar | ER diagram |

### Phase 2: Database Implementation (Weeks 3-4)

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Assigned To | Deadline | Dependencies |
| Create all database tables | All Members | 14-Mar | Database setup |
| Implement constraints and relationships | All Members | 18-Mar | Table creation |
| Create sample data for testing | All Members | 21-Mar | Constraints implementation |

### Phase 3: Core Application (Weeks 5-8)

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Assigned To | Deadline | Dependencies |
| User Authentication Module (DB to UI) | [Member 1] | 4-Apr | Database implementation |
| Course Catalog & Search (DB to UI) | [Member 2] | 4-Apr | Database implementation |
| Registration & Schedule View (DB to UI) | [Member 3] | 11-Apr | Database implementation |
| Admin Course Management (DB to UI) | [Member 4] | 11-Apr | Database implementation |
| Integration testing of modules | [Member 5] | 18-Apr | All module implementations |

### Phase 4: Testing & Documentation (Weeks 9-12)

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Assigned To | Deadline | Dependencies |
| System testing and bug fixes | All Members | 28-Apr | Integration testing |
| Documentation preparation | All Members | 5-May | System testing |
| Presentation preparation | All Members | 10-May | Documentation |

## 5. Team Contribution

Although all team members will contribute to each aspect of this project (full-stack experience) with a focus on database interactions, we will assign roles to each member to streamline development and break up the workload:

* [Member 1]: User authentication system (handling login, password security, and user roles)
* [Member 2]: Course catalog and search (retrieving course data, filtering, and searching features)
* [Member 3]: Registration and schedule viewing (enrollment process, managing conflicts, and viewing schedules)
* [Member 4]: Admin course management (creating, updating, and deleting course offerings and managing enrollments)
* [Member 5]: Reports and database integrity (handling stored procedures, triggers, validation, and generating basic reports for administrators)

## 6. Communication and Project Management Plan

Our team will communicate via email/text and meet every Monday at 6pm. We will use Jira for task tracking and GitHub for code management.