

## 1. Introduction

The College Management System is a centralized software solution designed to automate and streamline the academic and administrative processes within the college. It serves as a digital bridge connecting the three main pillars of the educational process: Students, Instructors, and Administrators. By replacing manual record-keeping with an efficient digital system, it ensures data consistency, accessibility, and smooth operation of academic activities.

## 2. Objectives

The primary objectives of the system are:

- **Data Centralization:** To maintain a unified database for Students, Instructors, Courses, and Departments.
- **Efficiency:** To facilitate core processes such as course registration, grade uploading, and material distribution.
- **Role-Based Access:** To ensure that each user (Admin, Instructor, Student) has access only to the functionalities relevant to their role.
- **Academic Tracking:** To allow students to track their GPA and grades easily, and enable instructors to manage their course schedules effectively.

## 3. Functional Requirements

The system enables users to perform the following functions based on the Class Diagram design:

- **User Authentication:** All users must log in securely using their credentials.
- **Administration:** The Admin can manage the system by adding new students, courses, and instructors.
- **Course Management:** Instructors can manage courses, upload materials, and upload student grades.
- **Student Services:** Students can register for available courses, download study materials, and view their grades and GPA.
- **Department Management:** The system organizes students, instructors, and courses under specific departments.

## 4. Non-Functional Requirements

- **Security:** Passwords and sensitive data must be protected, and unauthorized access must be prevented via the login mechanism.
- **Scalability:** The system structure (Classes and Relations) is designed to support a growing number of students and courses without structural changes.
- **Usability:** The system interfaces should be intuitive for all user types.
- **Availability:** The system should be accessible to students and instructors at all times for critical tasks like material downloading and grade checking.