Functional and Non-Functional Requirements Document

# System Requirements Specification

## 1. Functional Requirements

### 1.1 Authentication

* The system shall allow users to log in using a username and password.
* The system shall support two user roles:
  + Admin
  + Instructor

### 1.2 Student Management

* The system shall allow adding new student records.
* The system shall allow editing existing student records.
* The system shall allow viewing student records.
* Each student shall be assigned a unique ID to ensure distinct identification.

### 1.3 Course Management

* The system shall allow creation and management of courses.
* Each course shall be assigned to an instructor to manage the course content and related activities.

### 1.4 Enrollment Management

* The system shall allow enrolling students into courses.
* The system shall prevent duplicate enrollments of the same student in a particular course.

### 1.5 Attendance Tracking

* The system shall allow the recording of attendance for students in courses.
* The system shall support multiple attendance statuses, including:
  + Present
  + Absent
  + Late
  + Excused

### 1.6 Reporting

* The system shall generate attendance reports grouped by course.
* The system shall generate attendance reports grouped by individual student.
* The system shall calculate attendance rates to provide insights into student participation.

## 2. Non-Functional Requirements

### 2.1 Usability

* The system shall provide a simple command-line interface to facilitate user interaction.
* The system shall provide clear navigation between features to enhance user experience and reduce complexity.

### 2.2 Performance

* The system shall store all data in a local SQLite database to ensure efficient and reliable data management.
* The system shall operate without requiring an internet connection to enable offline functionality.

### 2.3 Security

* The system shall securely hash all user passwords to protect sensitive user information.
* The system shall restrict access to features and data based on user roles to enforce security policies.

### 2.4 Maintainability

* The system shall follow modular design principles to promote ease of maintenance and scalability.
* The system shall be organized into logical components to improve code readability and facilitate future enhancements.