

1. Purpose

This document describes the functional and non-functional requirements for the Course Registration System. The system allows students to register for courses, view their schedules, and manage their enrollment. Administrators can add, edit, and delete course information.

All requirements are written in a clear and measurable form.

2. Functional Requirements

a. User Registration & Login

Description:

- The system shall allow students to create an account and log in securely.**

Requirements:

- The system shall allow students to register using name, email and password.**
 - Registration and login shall not exceed three steps.**
 - User data shall be stored using C++ classes.**
 - The registration/login module shall be completed before any course-related functionality becomes available.**
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b. View Available Courses

Description:

- Students shall be able to view a list of all available courses.**

Requirements:

- The system shall display the course code, course name, capacity and credit hours.**
- The system shall show 100% of the stored courses.**
- Course data shall be retrieved from a collection of Course objects.**
- This feature shall be accessible immediately after the log in.**

c. Course Registration

Description:

- The system shall allow students to enroll in available courses.**

Requirements:

- A student may register for a course only if the course capacity is not exceeded.**
 - A student shall be allowed to register for a maximum of six (6) courses per semester.**
 - Enrollment shall link Student and Course objects.**
 - The course registration module shall be part of the main student interface.**
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d. Course Dropping

Description:

- Students shall be able to drop courses they have previously registered for.**

Requirements:

- A student shall only be allowed to drop a course that exists in their current schedule.**
 - Dropping a course shall remove it from the student's schedule.**
 - This feature shall be available from the same menu as course registration.**
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e. View Student Schedule

Description:

- Students shall be able to view the list of courses they are registered for.**

Requirements:

- The schedule shall list the course code, course name and credit hours.**
- Data shall be retrieved from the student's stored course list.**

- This feature shall be available in the same menu as registration and dropping functionality.
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f. Admin Course Management

Description:

- Administrators shall manage course information.

Requirements:

- The admin shall be able to add new courses.
 - The admin shall be able to edit existing course data.
 - The admin shall be able to delete courses.
 - All admin modifications shall be reflected immediately in the stored course data.
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g. Enrollment Capacity Enforcement

Description:

- The system shall enforce maximum course capacity.

Requirements:

- Each course shall have a defined maximum capacity.
 - The system shall prevent registration if the course is full.
 - Capacity checks shall be performed every time a student attempts to register.
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3. Non-Functional Requirements

a. Performance

- The system shall load all course data within 2 seconds of startup.
- Performance shall be verified during testing.

b. Usability

- The console interface shall provide clear menus and intuitive steps.

- **Users shall complete main tasks in fewer than 5 steps.**

e. Portability

- **The system shall run on Windows and Linux.**
- **Portability shall be tested before final submission.**