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Software Requirements Specification

for

<Final Project>

Version 1.0 approved

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Table of Contents

Table of Contents ii

Revision History ii

1. Introduction 1

1.1 Purpose 1

1.2 Document Conventions 1

1.3 Intended Audience and Reading Suggestions 1

1.4 Project Scope 1

1.5 References 1

2. Overall Description 2

2.1 Product Perspective 2

2.2 Product Features 2

2.3 User Classes and Characteristics 2

2.4 Operating Environment 2

2.5 Design and Implementation Constraints 2

2.6 User Documentation 2

2.7 Assumptions and Dependencies 3

3. System Features 3

3.1 System Feature 1 3

3.2 System Feature 2 (and so on) 4

4. External Interface Requirements 4

4.1 User Interfaces 4

4.2 Hardware Interfaces 4

4.3 Software Interfaces 4

4.4 Communications Interfaces 4

5. Other Nonfunctional Requirements 5

5.1 Performance Requirements 5

5.2 Safety Requirements 5

5.3 Security Requirements 5

5.4 Software Quality Attributes 5

6. Other Requirements 5

Appendix A: Glossary 5

Appendix B: Analysis Models 6

Appendix C: Issues List 6

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Anthony Meza | 11/4/24 | Revised Draft | 1.0 |
|  |  |  |  |

# Introduction

## Purpose

The purpose of this Software Requirements Specification (SRS) document is to outline the functional and non-functional requirements for the University Course Registration System. This system enables users, primarily students, to register for courses offered by the university across three semesters (spring, summer, and fall), manage course enrollments, and support the management of course capacities and waitlists (Tsui et al., 2018).

## Document Conventions

This document uses standard conventions to highlight requirements and structure information. Requirements are labeled with unique identifiers (e.g., REQ-1, REQ-2) and are organized by priority.

## Intended Audience and Reading Suggestions

* **University IT staff** responsible for system administration.
* **University students** using the system to enroll in courses.
* **University administrators** managing course information and enrollment settings.

## Project Scope

The University Course Registration System provides functionalities for user registration, login, course enrollment, waitlist management, and course withdrawal (Ciampa, 2024). The primary objectives are to streamline the enrollment process for students and to enable efficient course management by university administrators.

## References

* Tsui, et al. (2018)
* Ciampa, 2024

# Overall Description

## Product Perspective

The University Course Registration System is designed as a self-contained application enabling user account creation, course enrollment management, and waitlist functionalities. It maintains a database to store user profiles, course offerings, and enrollment statuses.

## Product Features

The system allows:

* Account creation and profile management.
* User authentication and secure login.
* Course browsing, enrollment, and waitlist management.

## User Classes and Characteristics

* **Students**: Manage course enrollments.
* **IT Staff**: Provide support and troubleshoot issues.
* **Administrators**: Configure course capacities and manage enrollments.

## Operating Environment

The system requires internet access and is compatible with common web browsers and secure database storage for user and course data.

## Design and Implementation Constraints

Passwords are securely encrypted. Course capacity limits may vary by semester.

## User Documentation

Documentation will include user manuals for students, a system administration guide, and online help tools.

## Assumptions and Dependencies

* A valid email address is required for user registration.
* System maintenance requires internet connectivity.

# System Features

## User Registration and Profile Creation

**Description and Priority**: Enables new users to register with a high priority.  
**Stimulus/Response Sequences**: User provides a unique ID, password, email, phone, and name.  
**Functional Requirements**:

* REQ-1: Ensure each user has a unique ID.
* REQ-2: Validate passwords against security standards.
* REQ-3: Store user profile information (name, phone, email).
* REQ-4: Notify users of invalid or duplicate IDs (Wills, 2022).

## User Login

**Description and Priority**: Allows users to access the system using unique credentials with high priority.  
**Stimulus/Response Sequences**: User enters ID and password; system verifies credentials.  
**Functional Requirements**:

* REQ-5: Verify user credentials upon login.
* REQ-6: Notify users of invalid credentials.

## Course Enrollment

**Description and Priority**: Enables course enrollment; high priority.  
**Stimulus/Response Sequences**: User views course list and enrolls if seats are available.  
**Functional Requirements**:

* REQ-7: Display available courses by semester.
* REQ-8: Permit enrollment for courses with open seats.
* REQ-9: Allow joining a waitlist for full courses.

## Waitlist Management

**Description and Priority**: Supports waitlisting; high priority.  
**Stimulus/Response Sequences**: User joins waitlist; system notifies user when space is available.  
**Functional Requirements**:

* REQ-10: Maintain waitlist for full courses.
* REQ-11: Notify users on waitlist when space opens.
* REQ-12: Allow users to cancel waitlist requests.

## Course Withdrawal

**Description and Priority**: Allows withdrawal from courses; high priority.  
**Stimulus/Response Sequences**: User withdraws; system notifies first person on waitlist.  
**Functional Requirements**:

* REQ-13: Allow course withdrawal.
* REQ-14: Notify waitlisted users upon withdrawal.

# External Interface Requirements

## User Interfaces

A user-friendly web interface with error messages for invalid inputs and confirmation for actions.

## Hardware Interfaces

Standard devices (desktop, tablet, mobile) with internet access.

## Software Interfaces

Connections with secure database systems to store and retrieve user and course data.

## Communications Interfaces

Standard web protocols (e.g., HTTPS) for secure data transmission.

# Other Nonfunctional Requirements

## Performance Requirements

The system should respond within 2 seconds for all user actions.

## Safety Requirements

N/A for this project.

## Security Requirements

Passwords must be encrypted and meet complexity standards (e.g., special characters, minimum length).

## Software Quality Attributes

The interface must be user-friendly and accessible to non-technical users.

# Other Requirements

<Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>

Appendix A: Glossary

N/A

Appendix B: Analysis Models

N/A

Appendix C: Issues List

N/A