**Week 1 –SRS Assignment**

Kevin Cox

CST 499: Capstone for Computer Software Technology

Instructor: Amr Elchouemi

March 7, 2022

Software Requirements Specification

for

Course Enrollment System

Version 1.0 approved

Prepared by Kevin Cox

7 Mar 2022

Table of Contents

Table of Contents ii

Revision History ii

1. Introduction 1

1.1 Purpose 1

1.2 Intended Audience and Reading Suggestions 1

1.3 Product Scope 1

1.4 References 1

2. Overall Description 2

2.1 Product Perspective 2

2.2 Product Functions 2

2.3 User Classes and Characteristics 2

2.4 Operating Environment 2

2.5 Design and Implementation Constraints 2

2.6 User Documentation 3

3. External Interface Requirements 3

3.1 User Interfaces 3

3.2 Hardware Interfaces 3

3.3 Software Interfaces 3

3.4 Communications Interfaces 3

4. System Features 3

4.1 Registration/Login Feature 3

4.2 Course Enroll/Disenroll Feature 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 5

Appendix C: To Be Determined List 5

Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
|  |  |  |  |
|  |  |  |  |

# Introduction

## Purpose

The primary purpose of this SRS is to create a program that will allow students to register and enroll in online courses themselves. This program will include registering for accounts, creating a password and a unique user ID while preventing the same ID from being assigned more than once. Additionally, while enrolling for courses, if a course is at capacity, the student should be added to a waiting list incase a student drops out of the class. Lastly, the student should be able to cancel a course that they enrolled in.

## Intended Audience and Reading Suggestions

**Project Managers/Developers/Testers** – Should review all parts of the SRS to ensure they fully understand the scope of system being created as well as all intended functions. This document is intended to be read from start to finish in numerical order.

## Product Scope

The main objectives of the enrollment system are to allow students to create a profile, enroll and disenroll in courses, and for the system to add students to a waiting list for courses that are at max capacity. The goal of this system is to streamline the enrollment process for students, which will alleviate faculty and support members from these duties and be able to provide increased aid in other areas. This system will also empower the students to become more involved in their academics and be able to tailor their course load to their individual needs. This system will also prevent too many students from enrolling in the same course.

## References

Connolly, R., & Hoar, R. (2018). Fundamentals of web development (2nd ed.). Pearson.

Lane, C., Kruger, N. (2021). How to Write a Software Requirements Specification (SRS Document). Retrieved from <https://www.perforce.com/blog/alm/how-write-software-requirements-specification-srs-document>

Spillner, A., Linz, T., & Schaefer, H. (2014). Software testing foundations: A study guide for the certified tester exam (4th ed.). Rocky Nook.

Tsui, F., Karam, O., & Bernal, B. (2018). Essentials of software engineering (4th ed.). Jones & Bartlett Learning.

# Overall Description

## Product Perspective

The registration and enroll/disenroll features that are outlined in this SRS will be used primarily by students. The users will be able to register for access to the course enrollment system. Once an account is created, they can begin viewing the available courses. They will have the rights to enroll and disenroll in courses at their leisure. Additionally, the system will put them into a waiting list dependent upon the number of enrolled students in each course and the courses specific max capacity. This feature will be easy to use regardless of the user’s level of education, experience, or frequency of use. This feature will not allow a customer to view anything that is classified or requires a specific security clearance. As this element only accesses products that are allowed to be on display, there is no risk of unauthorized access to products that are not to be displayed (i.e., future products not yet released).

## Product Functions

* Users can register for new account and profile.
* System assigns each user a unique ID associated with a password.
* System prevents the same unique ID from being assigned to more than one user.
* Profiles will include name, phone, email, etc.
* Users can login to system after registration is complete using ID and password.
* Online courses are displayed in list format throughout three semesters (spring/summer/fall).
* Courses have a set number of max students, differing for each course.
* Student gets added to waitlist if student enrolls in max capacity course.
* Student has ability to cancel enrollment of courses.
* System notifies student when next in line for an available spot of enrolled course.

## User Classes and Characteristics

User\_ID, Username, User\_Pwd, User\_Fst\_Name, User\_Lst\_Name, User\_Phone, User\_Email

Course\_ID, Course\_Stu\_Max, Course\_Stu\_Enrolled.

## Operating Environment

Windows Server 2008+

Windows Vista +

Mac OS X 10.6+

## Design and Implementation Constraints

As this feature will be adding to an E-commerce website already in place, there will not be any foreseeable constraints that involve system hardware. There may be a language requirement to allow for potentially different coding languages communicating together. The coding languages used should be the same as the E-commerce website as much as possible to minimize issues.

## User Documentation

User Manual: to aid future programming teams with maintenance of the course enrollment system. Instructions on how to add, remove, edit, and further augment the elements of this feature will be needed when new programming teams take over the project. Additionally, all past documentation such as requirement, architectural, and technical documents that were used to create the program will be added to aid future development teams. This will include any sketches or models created during the development phases.

# External Interface Requirements

## User Interfaces

The main page will display a login window in the middle with a navigation bar near the top with other page options. Within the login window, there will be an option for new users to register for an account. The navigation bar will include options to navigate to the course listing page. This page will display the different courses available for each semester as well as other information such as, course length, number of enrolled students, max number of students, as well as options for the users to enroll in a course, disenroll in a course, and see they position on a waiting list.

## Hardware Interfaces

The software will all be handled through the internet browser which will interact with the website and the server. No other hardware interfaces will be needed for the client-side other than a computer or smart device with internet access.

## Software Interfaces

This element of the system will interface with the course database as users view, enroll, and disenroll in courses. A library will likely be created to store the list of subcategories and their relations which will work with the product database as well to pull the associated products for the search.

## Communications Interfaces

The course viewing, enrollment, and disenrollment functions will communicate with the database that stores the course metadata. Additionally, the user login information will also be accessed within the database.

# System Features

## Registration/Login Feature

4.1.1 **Description and Priority**

This feature will allow users to register for new accounts and login to access the course enrollment system.

4.1.2 **Stimulus/Response Sequences**

Users will go to the site and the main page will display a window for the login prompts. If the user does not have an account, they can click the “Registration” button below the login blocks to begin registering for an account. Once the user has a username and password, they can go to the login window and access the system.

4.1.3 **Functional Requirements**

REQ-1.1: The main page will display a window with input blocks for “Username”, “Password”, and a “Login” and “Registration” button.

REQ-1.2: A successful login will change the navigation bar to shows a “Courses” button which will bring the user to the courses page.

REQ-1.3: The “Registration” button will prompt users to input information such as username, password, email address, phone number, etc.

REQ-1.4: Certain messages will be displayed depending on a successful registration or will display what information was incorrect or previously used.

## Course Enroll/Disenroll Feature

4.2.1 **Description and Priority**

This feature will allow the user to enroll and disenroll a course by themselves. This feature will also auto-add them to a waiting list if a course is at max capacity.

4.2.2 **Stimulus/Response Sequences**

User will select the course they want from a list by clicking on the course title. This will bring them to another page which displays all pertinent information about the course to include number of enrolled students and max capacity. There will be “ENROLL” and “DISENROLL” buttons for the user to click with a message prompt that will display once a button is selected. If the user is enrolled successfully, a message will display that. If the course is full, a message showing the user is added to the waiting list is displayed. If a user disenrolls from a previously enrolled class, a success message will display. If the user attempts to disenroll from a course that they are not enrolled, an error message will display for that.

4.2.3 **Functional Requirements**

REQ-2.1: Course enrollment system will be selected from a “Courses” button on the top navigation bar.

REQ-2.2: All available courses will be displayed for the user to select.

REQ-2.3: When a course is selected, all the information for that course will be displayed as well as “ENROLL” and “DISENROLL” buttons.

REQ-2.4: Certain messages will be displayed depending on the buttons clicked and the user’s current enrollment status for that course.

# Other Nonfunctional Requirements

## Performance Requirements

The database used will not have a vast amount of information to access like an Amazon.com database for example as only a small number of courses and users will be in the database. Due to this, the performance should not be negatively impacted when querying the database for information such as listing available courses or verifying a user during login.

## Safety Requirements

System and database administrators will have access to edit the system and database code and information. Users will not have the ability to access the database itself or other user’s personal information. Additionally, they will not have rights to change the information in any way other than enrolling and disenrolling themselves in courses, creating a profile, and logging in to the system.

## Security Requirements

The software system and database will be protected by an administration password to prevent any unauthorized access to the source code and metadata. This is to protect the personally identifiable information of the users that register in the system. Only authorized system and database administrators will have the login credentials to access and make changes. A limited access admin login may be created to aid individuals who provide IT support to the users if an issue arises, but this will not let them have full access to everything.

## Software Quality Attributes

Stability will be a leading attribute as students must depend on this system and database to enroll in their courses. If this system goes down for an extended period, it could cause issues with students and their financial program timelines. Simplicity will also be important to ensure there are minimal issues when new students attempt to enroll in courses on their own. Ensuring the system intuitive will safeguard against excessively needed IT support intervention.

# Other Requirements

No other requirements are foreseen at this time. Any future requirements found will be elevated as soon as discovered to ensure the maximum amount of time is allowed to accommodate.

Appendix A: Glossary

None currently.

Appendix B: Analysis Models

None currently.

Appendix C: To Be Determined List

None currently.

**References**

Connolly, R., & Hoar, R. (2018). Fundamentals of web development (2nd ed.). Pearson.

Lane, C., Kruger, N. (2021). How to Write a Software Requirements Specification (SRS Document). Retrieved from <https://www.perforce.com/blog/alm/how-write-software-requirements-specification-srs-document>

Spillner, A., Linz, T., & Schaefer, H. (2014). Software testing foundations: A study guide for the certified tester exam (4th ed.). Rocky Nook.

Tsui, F., Karam, O., & Bernal, B. (2018). Essentials of software engineering (4th ed.). Jones & Bartlett Learning.