

# Software Requirements Specification (SRS)

## Student–Course Management Web Application

### 1. Introduction

#### 1.1 Purpose

This document defines the software requirements for a TwoPage Web Application developed using **ASP.NET Core 8**.

The application manages Students, Courses, and Student–Course Mapping with support for:

1. CRUD operations
2. Search without page refresh
3. Soft delete functionality
4. Popupbased data entry

#### 1.2 Scope

The application will:

- Manage student details with full CRUD and live search
- Manage course master data using a popup (modal)
- Map students to courses
- Display mappings in a scrollable grid
- Use soft delete instead of physical deletion

### 2. Overall Description

#### 2.1 Product Perspective

The system is a standalone ASP.NET Core 8 MVC/Web API application consisting of two main UI pages:

1. Student Management Page
2. Course & Student Mapping Page

The backend will interact with a SQL Server database using:

1. Entity Framework Core
2. Stored Procedures for all database operations

**Frontend interactions will use:**

- JavaScript / jQuery
- AJAX for asynchronous operations

## 3. Functional Requirements

### 3.1 Page 1 – Student Management

#### 3.1.1 Student Grid

Display all active students in a grid

**Columns:**

- Student Name
- Phone Number
- Email ID
- Actions (Edit / Delete)
- Deleted (inactive) records must not appear

#### 3.1.2 Add Student

**Input Fields:**

1. Student Name (Required)
2. Phone Number (Required Numeric Exactly 10 digits)
3. Email ID (Required Valid email format)

**Behavior:**

- Save functionality with exception handling
- Success message displayed without page refresh
- Grid refreshes dynamically

### **3.1.3 Edit Student**

- Edit button loads selected student data into input fields
- Update button saves changes
- Changes reflected in grid instantly

### **3.1.4 Delete Student (Soft Delete)**

- Delete button marks record as Inactive
- Record is not physically deleted
- Student disappears from grid immediately
- Students mapped to courses cannot be deleted (validation)

### **3.1.5 Search Student (No Page Refresh)**

**Search by:**

- Student Name
- Phone Number
- Email ID
- **Search filters grid dynamically without Page refresh**
- **No page reload allowed**

## **3.2 Page 2 – Course & Student Mapping**

### **3.2.1 Course Master (Popup Modal)**

Clicking “Add Course” opens a popup modal

**Fields:**

- Course Name (Required)
- Course Code (Required, Unique)

Save happens without Page refresh

**On Success:**

- Popup closes
- Success message shown
- Newly added course becomes immediately available in autocomplete

**On Failure:**

- Error message shown inside popup
- No page refresh

**3.2.2 Student Autocomplete**

- Autocomplete dropdown listing active students
- Data loaded dynamically from database

**3.2.3 Course Autocomplete**

- Autocomplete dropdown listing active courses
- Newly added courses must appear immediately
- No page refresh

**3.2.4 Map Course to Student**

**Select:**

- Student
- Course
- ❖ Save mapping
- ❖ Duplicate mapping not allowed
- ❖ Success/error message displayed dynamically

**3.2.5 Course Mapping Grid**

Scrollable grid

**Displays:**

- Student Name
- Course Name
- Course Code
- Action (Delete)

Only active mappings displayed

**3.2.6 Delete Mapping (Soft Delete)**

- Delete button marks mapping as inactive
- No physical deletion
- Grid updates dynamically

**End of Document**