

# Final Software Project

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CST499: Capstone for Computer Software Technology

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# Software Requirements Specification (SRS)

## Software Requirements Specification

for

## Online Student Enrollment Website

Version 1.0 approved

Prepared by Austin Blair

UAGC

Software Requirements Specification for Online Student Enrollment

Page ii

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The Software Requirements Specification document provides a clear outline of the goals of the Online Course Enrollment website and how it will function. The SRS specifies the details of the software build including System Features, External Interface Requirements, and Nonfunctional requirements such as safety, performance, security and other quality attributes.



# Software Requirements Specification (SRS)

One of the key sections of the SRS is System Features. This section explains the different functions that are required by the system to satisfy end-user requirements.

## System Features:

- New User Account Registration
- User Login
- Course Search →
- Register for a Course →
- View Course Schedule
- Drop Course
- User Logout
- Waitlist Notification System

### 3.3 Course Search

#### 3.3.1 Description and Priority

- ◇ Description: Users should have the ability to search for available courses. Course searches shall be filtered by semester (Spring, Summer, Fall). This will ensure that only available courses are displayed.
- ◇ Priority: High
- ◇ Benefit: High

#### 3.3.2 Stimulus/Response Sequences

- ◇ User selects "Course Search" tab from the "Course Registration Page"
- ◇ User selects the "Semester" filter option for either Spring, Summer, or Fall.

### 3.4 Register for a Course

#### 3.4.1 Description and Priority

- ◇ Description: Users should have the ability to register for available courses. This function is dependent on a current user account.
- ◇ Priority: High
- ◇ Benefit: High

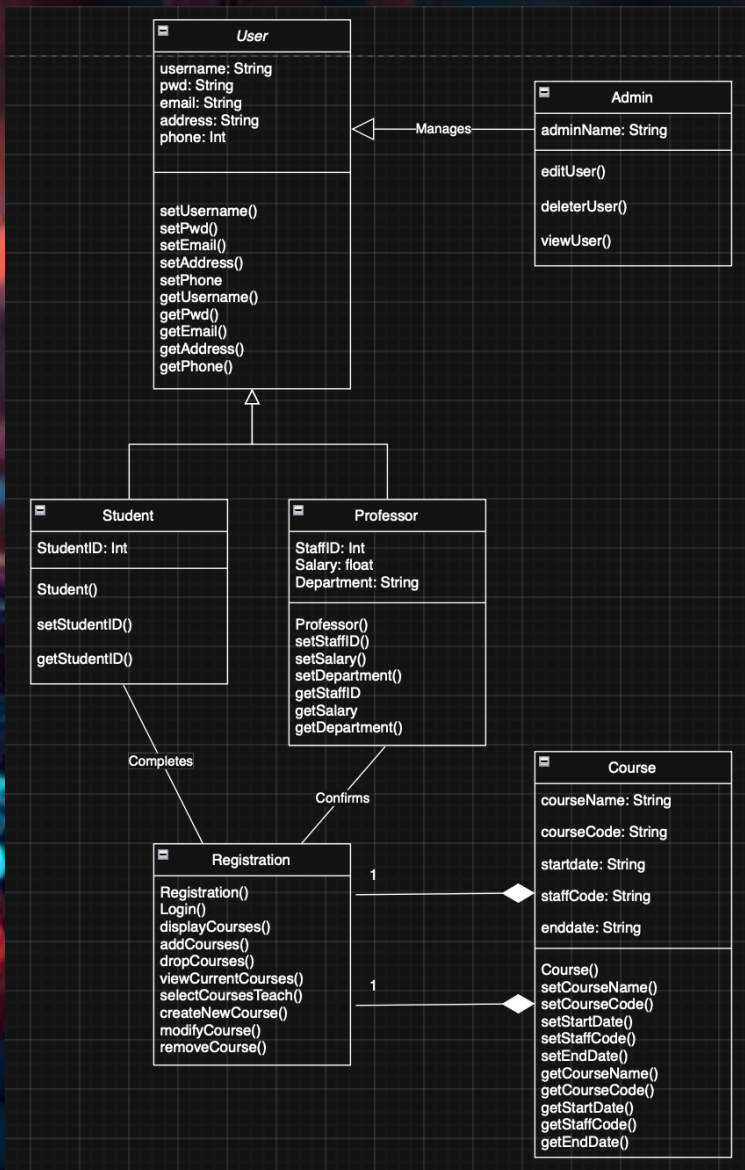
#### 3.4.2 Stimulus/Response Sequences

- ◇ Once logged in, the user selects the "Register for Course" tab from the "Course Registration" home page.
- ◇ User selects the "Semester" filter option for either Spring, Summer, or Fall.
- ◇ User selects the "Submit" once the chosen semester is selected.
- ◇ User is provided with available courses for the specified semester.
- ◇ User selects which course that is desired for enrollment and selects submit.
- ◇ If the course is available, the user receives a successful registration message.
- ◇ If the course is full, the user will be notified, and presented with the option of being placed on a waiting list
- ◇ If the waiting list option is selected, the user is redirected to the "Course Registration" home page to enable further class searches.





## Class



# UML Models

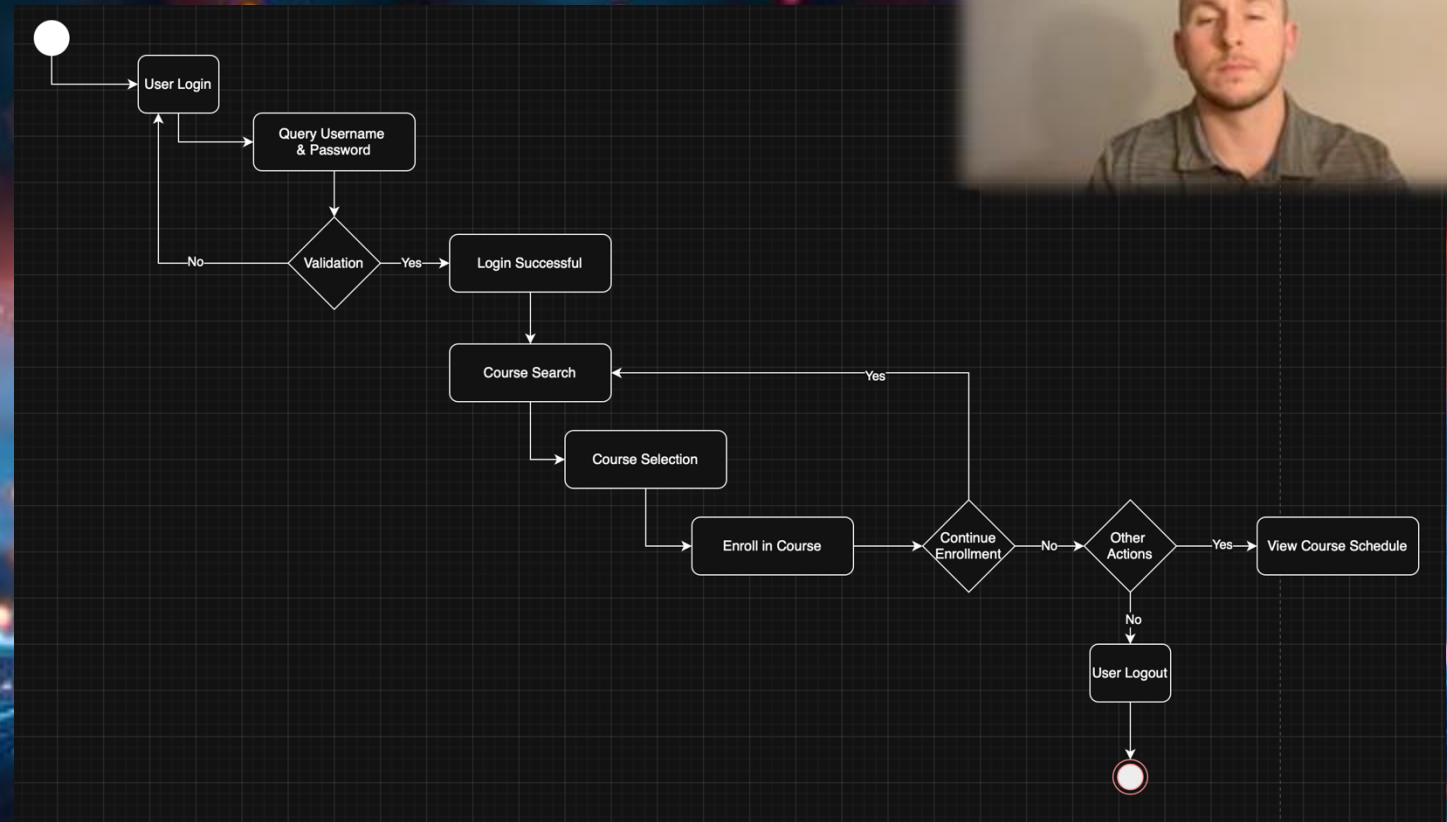
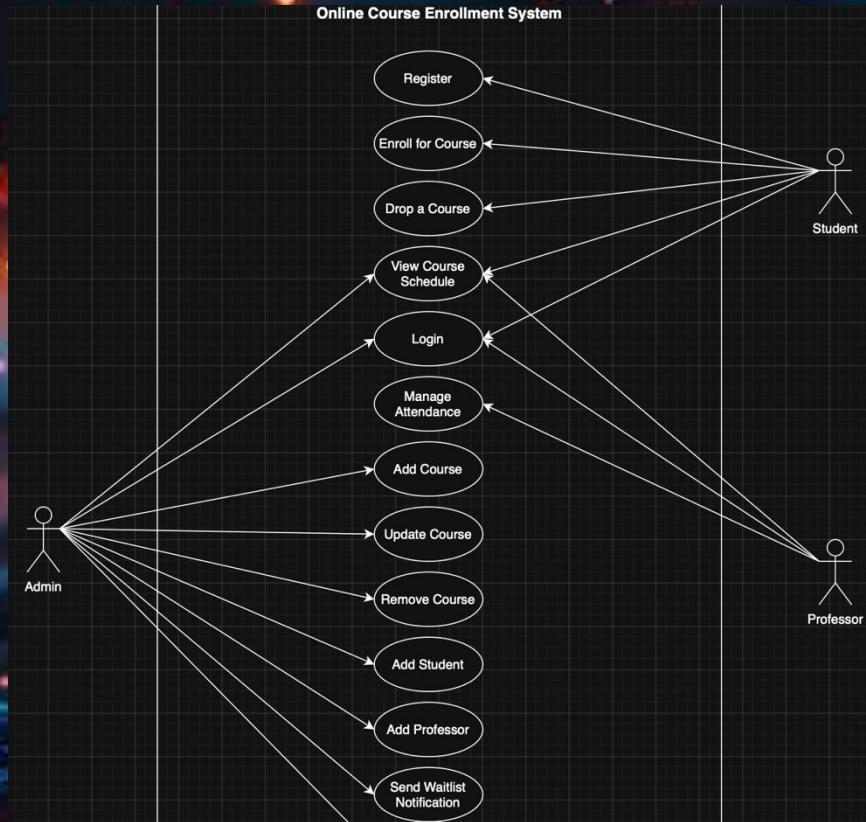
Unified Modeling Language (UML) models are a general-purpose modeling language that defines a standard way to visualize a software system's design, behavior, and structure.

The **Class** diagram depicts the static structure of the system by displaying the system's classes, methods, and attributes.

The **Sequence** diagram displays how and in what order the objects in the Online Course Enrollment System function.

## Sequence





The Use-Case diagram, as seen in the Figure above, illustrates the system's functionality by showing the different actions permitted by each user of the system .

## UML Models

The State Machine diagram, as seen above, represents the condition of the Online Course Enrollment system at fixed instances in time.

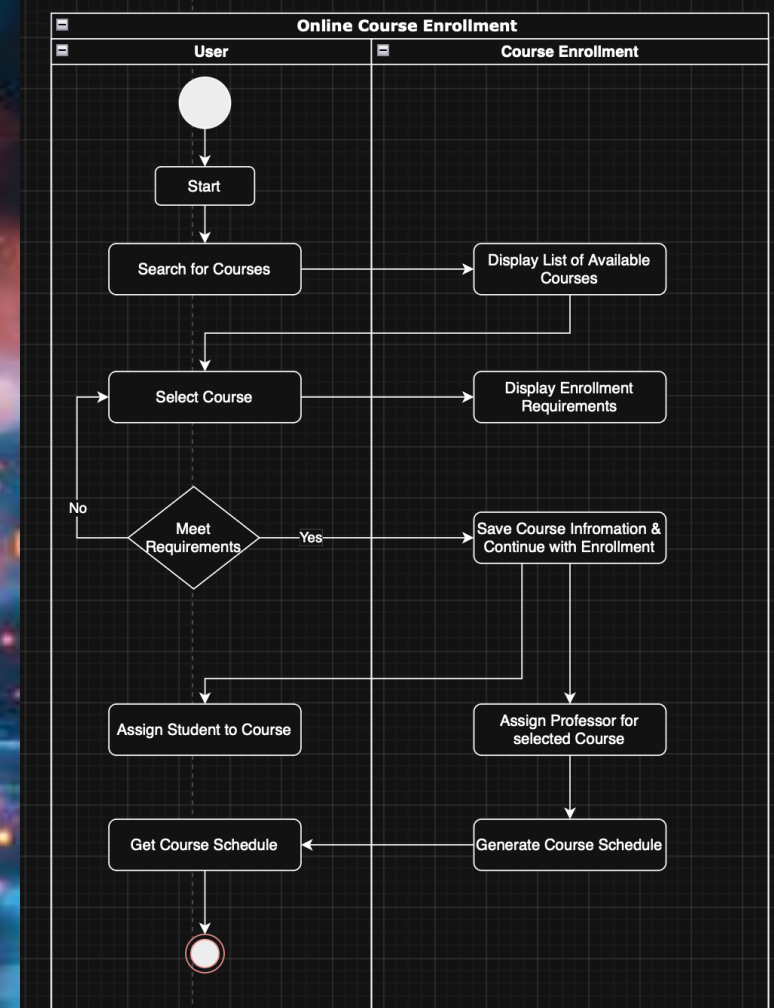
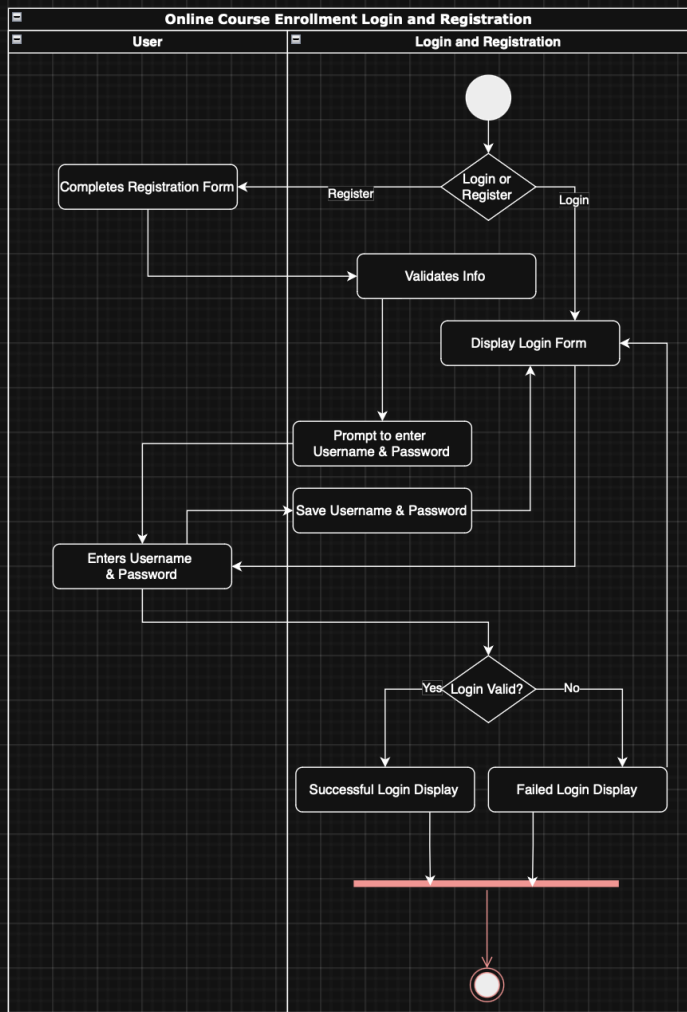


# UML Models

Activity diagrams represent the flow of control in the Online Course Enrollment system.



The diagram above represents the flow of control for user Login & Registration

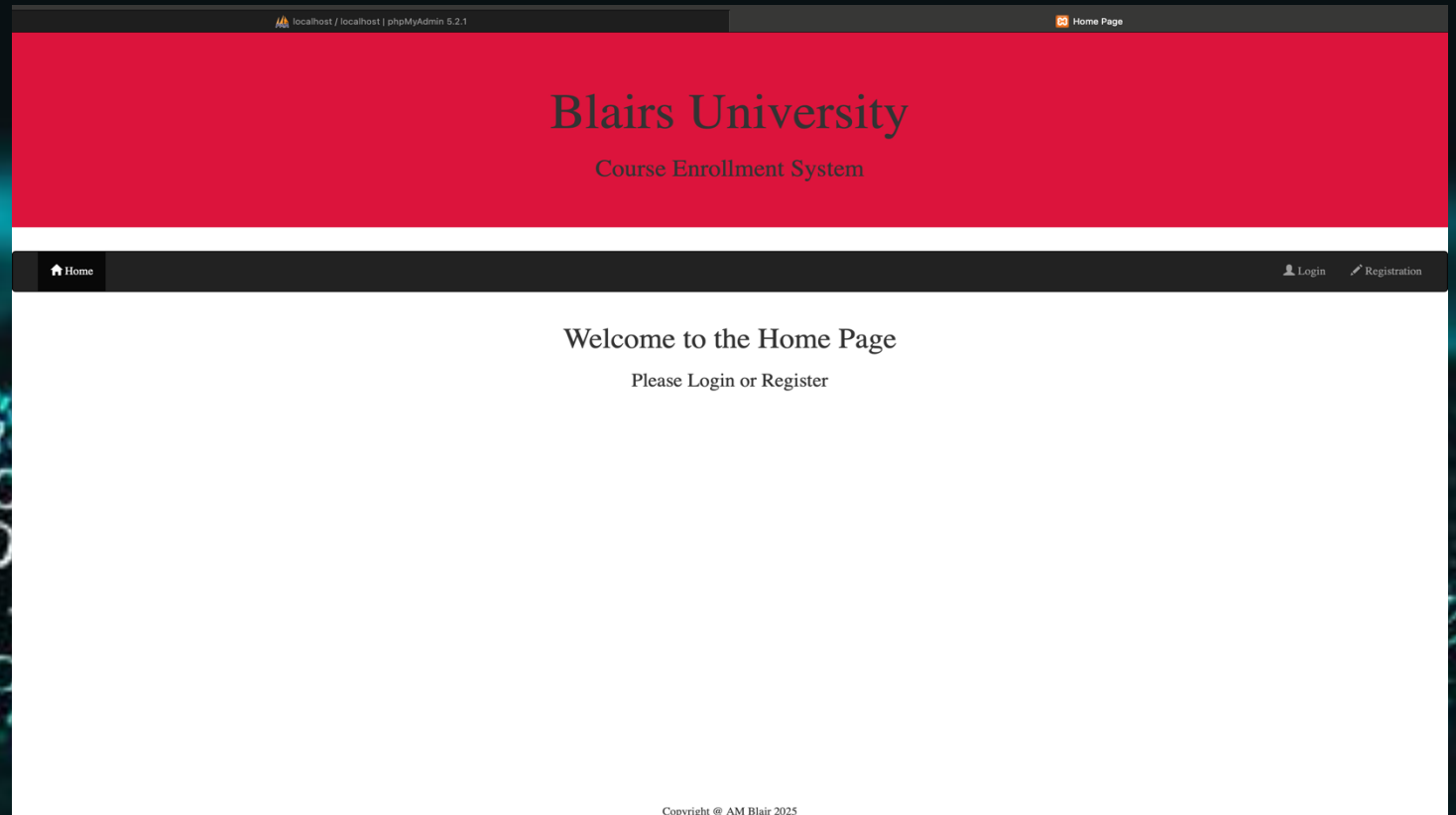


The diagram on the right represents the flow of control for users enrolling in courses.



# Landing Page

The Landing page is the initial page users are presented with when accessing the Online Course Enrollment website. The goal of this page was to create a uniform and user-friendly display, with ease of navigability for the available functions.



# Login | Registration

The Login page, on bottom left, allows registered users to login and view profile details, view/alter their course schedule, and register for courses.

The Registration page, below, enables users who do not have an account to create one. As you can see in the snippet below, once an account is created the message “Thank you for registering!” is displayed signifying that the data was saved into the database.

The screenshot shows the login page of the Blairs University Course Enrollment System. The page has a red header with the university name and a dark navigation bar. The main content area is white and titled "Welcome to the Login Page". It contains a form with fields for "Email" (pre-filled with "henry.frank@gmail.com") and "Password" (masked with dots). A blue "Submit" button is at the bottom of the form. The footer includes a copyright notice: "Copyright © AM Blair 2025".

The screenshot shows the registration page of the Blairs University Course Enrollment System. The page has a red header with the university name and a dark navigation bar. The main content area is white and titled "Welcome to the Registration Page". It contains a form with fields for "Email", "Password", "First Name", "Last Name", "Address", "Address 2", "City", "State" (a dropdown menu), "Zip", "Phone", and "Degree". A blue "Register" button is at the bottom of the form. Below the form, the message "Thank you for registering!" is displayed. The footer includes a copyright notice: "Copyright © AM Blair 2025".



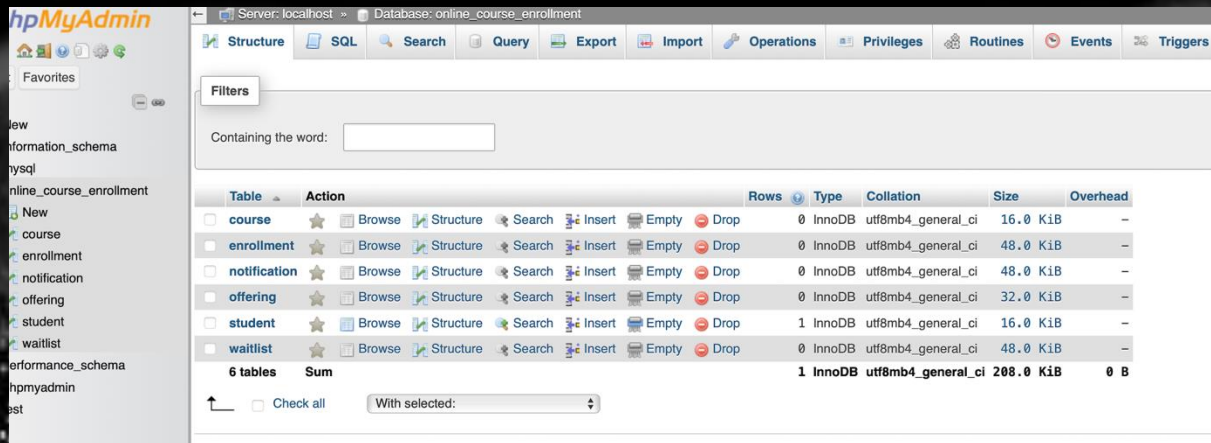




# MySQL Database

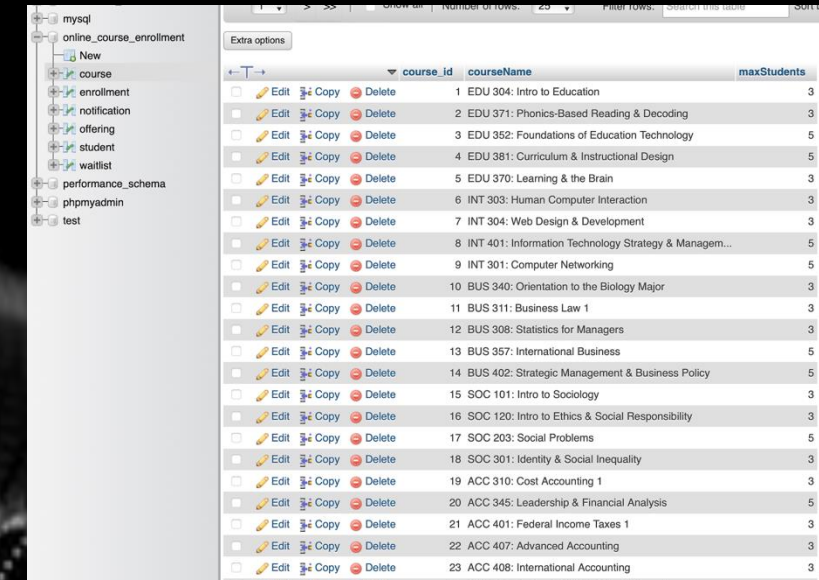
The first image below is a snippet of the offering table. This table incorporates the entirety of the available courses offered on the Online Course Enrollment Website. The courses were inserted into the database using the populateData.sql file.

The second image below is the users table. This table displays the different users who have created accounts using the registration page. The users table is accessed each time a user logs in, permitting access to their profile page and website functions such as viewing/altering their course schedule or searching and enrolling for additional courses.



Server: localhost - Database: online\_course\_enrollment

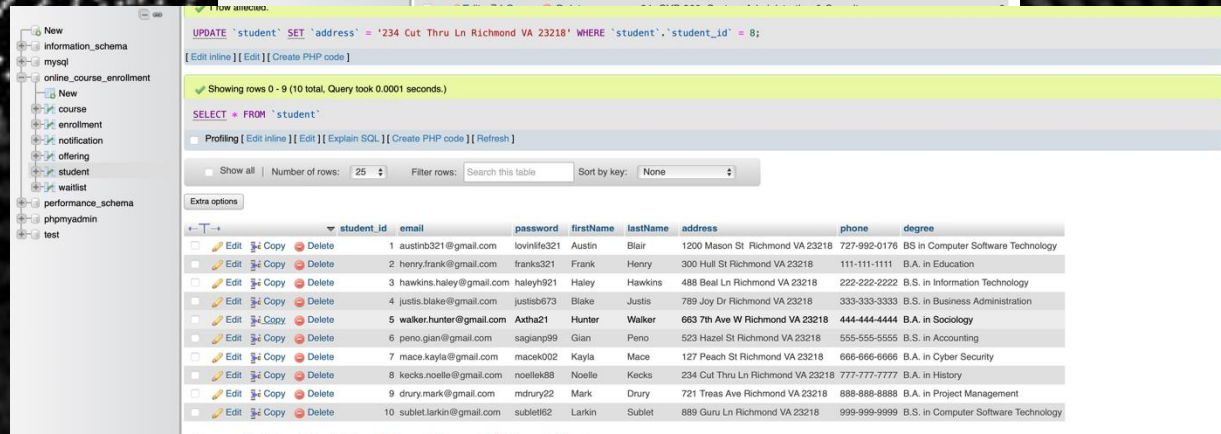
Table	Action	Rows	Type	Collation	Size	Overhead
course	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
enrollment	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	48.0 KiB	-
notification	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	48.0 KiB	-
offering	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	32.0 KiB	-
student	Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_general_ci	16.0 KiB	-
waitlist	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	48.0 KiB	-
6 tables	Sum	1	InnoDB	utf8mb4_general_ci	208.0 KiB	0 B



mysql online\_course\_enrollment

course_id	courseName	maxStudents
1	EDU 304: Intro to Education	3
2	EDU 371: Phonics-Based Reading & Decoding	3
3	EDU 352: Foundations of Education Technology	5
4	EDU 381: Curriculum & Instructional Design	5
5	EDU 370: Learning & the Brain	3
6	INT 303: Human Computer Interaction	3
7	INT 304: Web Design & Development	3
8	INT 401: Information Technology Strategy & Managem...	5
9	INT 301: Computer Networking	5
10	BUS 340: Orientation to the Biology Major	3
11	BUS 311: Business Law 1	3
12	BUS 308: Statistics for Managers	3
13	BUS 357: International Business	5
14	BUS 402: Strategic Management & Business Policy	5
15	SOC 101: Intro to Sociology	3
16	SOC 120: Intro to Ethics & Social Responsibility	3
17	SOC 203: Social Problems	5
18	SOC 301: Identity & Social Inequality	3
19	ACC 310: Cost Accounting 1	3
20	ACC 345: Leadership & Financial Analysis	5
21	ACC 401: Federal Income Taxes 1	3
22	ACC 407: Advanced Accounting	3
23	ACC 408: International Accounting	3

The database named online\_course\_enrollment consists of six different tables as seen in the above image and acts as the backend of the website.



mysql online\_course\_enrollment

UPDATE 'student' SET 'address' = '234 Cut Thru Ln Richmond VA 23218' WHERE 'student`.`student\_id` = 8;

Showing rows 0 - 9 (10 total, Query took 0.0001 seconds.)

SELECT \* FROM 'student'

student_id	email	password	firstName	lastName	address	phone	degree
1	austinb321@gmail.com	lovinfl321	Austin	Blair	1200 Mason St Richmond VA 23218	727-992-0176	BS in Computer Software Technology
2	henryfrank@gmail.com	franks321	Frank	Henry	300 Hull St Richmond VA 23218	111-111-1111	B.A. in Education
3	hawkins.haley@gmail.com	haley921	Haley	Hawkins	488 Beal Ln Richmond VA 23218	222-222-2222	B.S. in Information Technology
4	justis.blake@gmail.com	justisb673	Blake	Justis	789 Joy Dr Richmond VA 23218	333-333-3333	B.S. in Business Administration
5	walker.hunter@gmail.com	Axtha21	Hunter	Walker	663 7th Ave W Richmond VA 23218	444-444-4444	B.A. in Sociology
6	peno.gian@gmail.com	sagiang99	Gian	Peno	523 Hazel St Richmond VA 23218	555-555-5555	B.S. in Accounting
7	mace.kayla@gmail.com	macek002	Kayla	Mace	127 Peach St Richmond VA 23218	666-666-6666	B.A. in Cyber Security
8	kecks.noelle@gmail.com	noellek88	Noelle	Kecks	234 Cut Thru Ln Richmond VA 23218	777-777-7777	B.A. in History
9	drury.mark@gmail.com	mduury22	Mark	Drury	721 Treas Ave Richmond VA 23218	888-888-8888	B.A. in Project Management
10	sublet.larkin@gmail.com	sublet62	Larkin	Sublet	889 Guru Ln Richmond VA 23218	999-999-9999	B.S. in Computer Software Technology

# Class Registration

To allow users to search and enroll for courses, the **Register for Courses** tab in the navigation bar directs users to the page on the top right. This page allows users to filter available courses by semester and year. Once selected, available courses are presented, and the user may either select the course(s) they wish to enroll in or initiate another search.

Once enrolled in courses, users can select the **View Schedule** tab on the navigation bar which directs them to the course schedule page. This page allows users to view and verify their schedule, with the option to drop courses as needed.

The screenshot shows the 'Search for Courses' page of the Blairs University Course Enrollment System. The page has a red header with the university name and a navigation bar with links for Home, Profile, View Schedule, Register for Courses, and Logout. The main content area has a search form with two dropdown menus for 'Semester' and 'Year', and a 'Submit' button. The footer contains the copyright notice 'Copyright © AM Blair 2025'.

Blairs University  
Course Enrollment System

Search for Courses

Please select the semester and year that you would like to register for

Semester: Choose... Year: Choose... Submit

Copyright © AM Blair 2025

The screenshot shows the 'View Schedule' page of the Blairs University Course Enrollment System. The page has a red header with the university name and a navigation bar with links for Home, Profile, View Schedule, Register for Courses, and Logout. The main content area displays the user's course schedule for 'Frank'. The table lists five courses with their respective semesters and years, and a 'DROP' button for each. The footer contains the copyright notice 'Copyright © AM Blair 2025'.

Blairs University  
Course Enrollment System

Here is your course schedule, Frank

You are registered for:

INT 301: Computer Networking	Fall	2025	DROP
BUS 340: Orientation to the Biology Major	Summer	2026	DROP
BUS 311: Business Law I	Summer	2026	DROP
BUS 308: Statistics for Managers	Fall	2026	DROP
BUS 402: Strategic Management & Business Policy	Summer	2026	DROP

Copyright © AM Blair 2025







The segments of PHP code below incorporate the logic behind the sole purpose of the website: enroll in courses. Each PHP code file communicates with the database to enable users to complete a desired action. These include search for available courses, add courses based on availability, and view their course schedule. The logic which enables users to drop classes is encapsulated within the view schedule code.

The segments of PHP code below incorporate the logic behind the sole purpose of the website: enroll in courses. Each PHP code file communicates with the database to enable users to complete a desired action. These include search for available courses, add courses based on availability, and view their course schedule. The logic which enables users to drop classes is encapsulated within the view schedule code.

```

1  <?php
2  error_reporting(error_level: E_ALL ^ E_NOTICE);
3  require_once('connect.php');
4  unset($_SESSION['selectedSemester']);
5  unset($_SESSION['selectedYear']);
6  unset($_SESSION['selectedCourse']);
7  unset($_SESSION['selectedOfferingId']);
8  require 'master.php';
9  $myConnection = $newConnection->connection;
10
11  ?>
12  <!DOCTYPE html>
13  <html lang="en">
14  <head>
15  <title> Search Courses </title>
16  <meta charset="utf-8">
17  <meta name="viewport" content="width=device-width, initial-scale=1">
18  <link rel="stylesheet" href="http://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap.min.css">
19  <link rel="stylesheet" href="index.css">
20  <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.0/jquery.min.js"></script>
21  <script src="http://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/js/bootstrap.min.js"></script>
22  </head>
23  <body>
24
25  <div class="container text-center">
26    <h1>Search for Courses</h1>
27    <h3>Please select the Semester and Year that you would like to register for</h3>
28  </div>
29  <div style="margin-bottom: 60px;" class="container">
30    <form class="padding-top" method="post" action="<?php echo htmlspecialchars(string: $_SERVER["PHP_SELF"])
31      <div class="form-row">
32        <div class="form-group col-md-6" id="no-padding-left">
33          <label for="inputSemester">Semester</label>
34          <select id="inputSemester" class="form-control" name="semester" required>
35            <option>Choose...</option>
36          </select>
37        </div>
38        <div class="form-group col-md-6" id="no-padding-left">
39          <label for="inputYear">Year</label>
40          <select id="inputYear" class="form-control" name="year" required>
41            <option>Choose...</option>
42          </select>
43        </div>
44      </div>
45      <div class="form-group col-md-6" id="no-padding-left">
46        <label for="inputYear">Year</label>
47        <select id="inputYear" class="form-control" name="year" required>
48          <option>Choose...</option>
49        </select>
50      </div>
51    </form>
52  </div>
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59    <form class="padding-top" method="post" action="<?php echo htmlspecialchars(string: $_SERVER["PHP_SELF"])
60      <div class="form-row">
61        <div class="form-group col-md-6" id="no-padding-left">
62          <label for="inputSemester">Semester</label>
63          <select id="inputSemester" class="form-control" name="semester" required>
64            <option>Choose...</option>
65          </select>
66        </div>
67        <div class="form-group col-md-6" id="no-padding-left">
68          <label for="inputYear">Year</label>
69          <select id="inputYear" class="form-control" name="year" required>
70            <option>Choose...</option>
71          </select>
72        </div>
73      </div>
74      <div class="form-group col-md-6" id="no-padding-left">
75        <label for="inputYear">Year</label>
76        <select id="inputYear" class="form-control" name="year" required>
77          <option>Choose...</option>
78        </select>
79      </div>
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89      <div class="form-row">
90        <div class="form-group col-md-6" id="no-padding-left">
91          <label for="inputSemester">Semester</label>
92          <select id="inputSemester" class="form-control" name="semester" required>
93            <option>Choose...</option>
94          </select>
95        </div>
96        <div class="form-group col-md-6" id="no-padding-left">
97          <label for="inputYear">Year</label>
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99            <option>Choose...</option>
100          </select>
101        </div>
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120          <label for="inputSemester">Semester</label>
121          <select id="inputSemester" class="form-control" name="semester" required>
122            <option>Choose...</option>
123          </select>
124        </div>
125        <div class="form-group col-md-6" id="no-padding-left">
126          <label for="inputYear">Year</label>
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128            <option>Choose...</option>
129          </select>
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131      </div>
132      <div class="form-group col-md-6" id="no-padding-left">
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134        <select id="inputYear" class="form-control" name="year" required>
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154        <div class="form-group col-md-6" id="no-padding-left">
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159        </div>
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164          <option>Choose...</option>
165        </select>
166      </div>
167    </form>
168  </div>
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179          <select id="inputSemester" class="form-control" name="semester" required>
180            <option>Choose...</option>
181          </select>
182        </div>
183        <div class="form-group col-md-6" id="no-padding-left">
184          <label for="inputYear">Year</label>
185          <select id="inputYear" class="form-control" name="year" required>
186            <option>Choose...</option>
187          </select>
188        </div>
189      </div>
190      <div class="form-group col-md-6" id="no-padding-left">
191        <label for="inputYear">Year</label>
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210          </select>
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212        <div class="form-group col-md-6" id="no-padding-left">
213          <label for="inputYear">Year</label>
214          <select id="inputYear" class="form-control" name="year" required>
215            <option>Choose...</option>
216          </select>
217        </div>
218      </div>
219      <div class="form-group col-md-6" id="no-padding-left">
220        <label for="inputYear">Year</label>
221        <select id="inputYear" class="form-control" name="year" required>
222          <option>Choose...</option>
223        </select>
224      </div>
225    </form>
226  </div>
227
228  <div class="container text-center">
229    <h1>Search for Courses</h
```

## Search for Courses

THANK YOU





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