

# Degree Navigator - Developer Manual

## 1. Project Overview

Degree Navigator is a full stack web application that helps students plan their degree progress and lets advisors manage advisees. It is built with a LAMP style stack;

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For Frontend

- HTML 5, CSS 3, JavaScript
- Provides responsive pages for students and advisors, dynamic DOM updates with a Fetch API.

For Backend

- PHP 8
- REST like endpoints, that return JSON and handle sessions.

For Database

- MySQL / MariaDB
- Relational schema (schema.sql) holding users, courses, degree plans, etc.

The flow goes:

**Browser -> PHP -> PDO -> MySQL -> PHP -> JSON -> Browser**

The frontend uses fetch() to hit PHP end points which query the DB with prepared statements via the PDO.

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## 2. Directory & File Layout

Below we have a simple layout of the files:

---

```
DegreeNavigator/  
  -Backend/  
    -db.php           #Central PDO connection  
    -login.php  
    -dashboard.php    #Role redirector  
    -advisor-info.php  
    -...  
  -Database/  
    -schema.sql       #full DDL + seed data  
  -Frontend/  
    -html/  
      -join/  
      -student/  
      -advisor/  
    -css/  
    -javascript/  
      -student-dashboard.js  
      -advisor-dashboard.js  
      -...  
    -images/  
  -Others/  
    -README  
    -RM.pdf  
    -...
```

---

### 3. Prerequisites

- PHP > 8.0 with MySQL
- MySQL 8 or MariaDB 10+
- Git

### 4. Cloning & Running Locally

Here we have the steps to fully set up the entire website.

#### 1. Clone the repo

In the terminal run:

```
$ git clone https://github.com/SinghRanbir57/Degree_Navigator_CPSC_471.git  
$ cd Degree_Navigator_CPSC_471
```

#### 2. Start the MySQL and DB + user

```
$ mysql -u root -p
```

\$ Login using your MySQL password

Run:

```
CREATE DATABASE DegreeNavigator CHARACTER SET utf8mb4 COLLATE  
utf8mb4_0900_ai_ci;  
CREATE USER 'dn_user'@'localhost' IDENTIFIED BY 'dn_pass';  
GRANT ALL PRIVILEGES ON DegreeNavigator.* TO 'dn_user'@'localhost';  
FLUSH PRIVILEGES;  
EXIT;
```

#### 3. Import schema & seed data

```
$ mysql -u root -p DegreeNavigator
```

\$ Login using your MySQL password

Run:

```
SET FOREIGN_KEY_CHECKS=0;  
SOURCE database/schema.sql;  
SET FOREIGN_KEY_CHECKS=1;  
EXIT;
```

#### 4. Configure credentials

Go to Backend/PHP/db.php

Set your MySQL password within the db.php and save file:

```
1  <?php
2  /**
3   * This is the Centralised PDO connection,
4   * Edit the $user and $pass values to match your local database
5   * credentials.
6   */
7
8   $host = 'localhost';
9   $db   = 'DegreeNavigator';
10  $user = 'root';
11  $pass = ''; //----- your MySQL password
12
13  $charset = 'utf8mb4';
14
15  $dsn = "mysql:host=$host;dbname=$db;charset=$charset";
16
17  $options = [
18      PDO::ATTR_ERRMODE => PDO::ERRMODE_EXCEPTION,
```

#### 5. Launch the dev server

Run in the terminal:

php -S localhost:8000

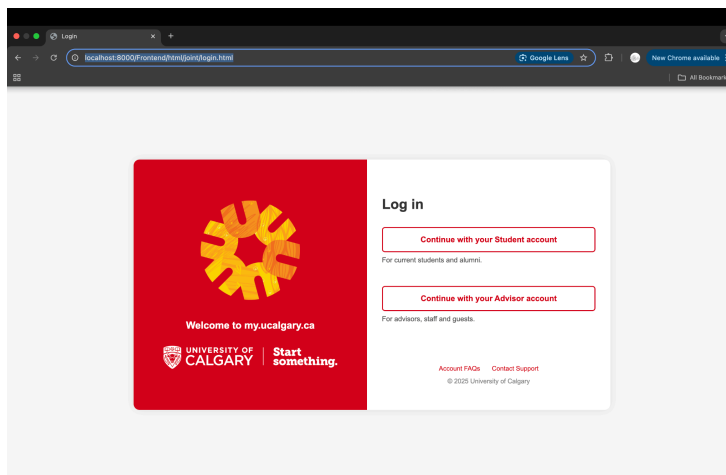
#### 6. Lastly navigate to this link in a browser (preferably Chrome)

Click: <http://localhost:8000/Frontend/html/joint/login.html>

or

Paste in: <http://localhost:8000/Frontend/html/joint/login.html>

After this step we should see the front login page of our website, the instructions, are down below in section 8.



## 5. Backend API Quick Reference Guide

Endpoint	Methods	Role	Purpose
/Backend/PHP/login.php	POST	public	Authenticate _session redirect
/Backend/PHP/logout.php	GET	any	Destroy session
/Backend/PHP/advisee-info.php	GET	advisor	JSON list of advisees
/Backend/PHP/advisor-info.php	GET	advisor	Advisor database info
/Backend/PHP/student-info.php	GET	student	Student database info
/Backend/PHP/request-meeting.php	GET / POST / Patch / Delete	mixed	CRUD meetings

## 6. Session & Role Flow

1. Login Form (**login.html**) posts to login.php
2. login.php validates credentials and set: `$_SESSION['user_id']`
3. User is then forwarded to dashabrod.php which redirects:
  - a. student -> **/Frontend/html/student/student-dashboard.php**
  - b. advisor -> **/Frontend/html/advisor/advisor-dashboard.php**
4. Each dashboard embeds JS that hits role specific endpoints and if a session si invalid, PHP returns a 401 and the JS redirects back to the login page.

## 7. Database Schema

Below we have some of our database design, which matches with our RM linking to the MySQL:

---

USERS(UserID, Username, Password, Role, FirstName, LastName, ...)  
Students(StudentID PK/FK, MajorMinor, GPA, Course\_year)  
Advisors(AdvisorID PK/FK, Department)  
Advisees(AdvisorID FK, StudentID FK)  
Meetings(id PK, advisorId FK, studentId FK, date, time, status)  
Courses(CourseID PK, CourseCode, CourseName, Credits, ...)  
Semesters(SemesterID PK, Term, Year)  
...

---

## 8. Usage Walkthrough & Features With Images

First lets login, under the README, or right here: we have our two different login accounts, first lets login as a student, press the student login and enter for

Important Note:

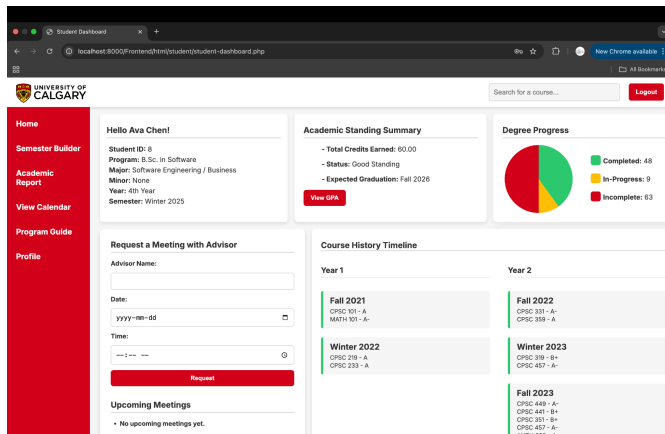
- Please use Full Screen when viewing websites for optimal results!

Student Login:

User: avac

Pass: avapass

Once logged in you will be sent to the main student dashboard:



Here you can explore and see different functionality of the website, things such as the students profile in the top left, gpa, and degree progress. We also in progress courses and requests to schedule meetings. Go ahead and try scheduling a meeting:

You will see if you input the wrong advisor Name, say: **Alex Johnson**

The screenshot shows the "Request a Meeting with Advisor" form. The "Advisor Name" field contains "Alex Johnson". The "Date" field is set to "2025-04-24" and the "Time" field is set to "05:59 PM". A red "Request" button is visible. Below the form, the "Upcoming Meetings" section indicates "No upcoming meetings yet."

**Request a Meeting with Advisor**

Advisor Name:  
Alex Johnson

Date:  
2025-04-24

Time:  
05:59 PM

**Request**

**Upcoming Meetings**

- No upcoming meetings yet.

The screenshot shows the "Upcoming Meetings" section. It indicates "No upcoming meetings yet."

**Upcoming Meetings**

- No upcoming meetings yet.

**Upcoming Courses**

**You are not assigned to this advisor**

However if you submit the correct Advisor for Ava, say: **Emily Wong**


✓ Meeting request sent!

You will also see the current status of the meetings:

### Upcoming Meetings

- 2025-05-02 17:59:00 with Advisor ID 2 [pending]
- 2025-04-24 03:30:00 with Advisor ID 2 [declined]
- 2025-04-17 17:01:00 with Advisor ID 2 [pending]

Next lets check out the semester builder in the top left:

 UNIVERSITY OF  
CALGARY

[Home](#)  
[Semester Builder](#)  
[Academic Report](#)  
[View Calendar](#)  
[Program Guide](#)  
[Profile](#)

**Hello Et**  
  
Student  
Program  
Major: E  
Minor: N  
Year: 3rd  
Semester

**Reque**  
  
Advisor



Here we can add a few different classes in the right hand side, check out CPSC 217 or CPSC 313,

(e.g., CPSC 231) or keywords (e.g., "data") to view available options. Click "Add to Plan" to include a course in your semester plan.

---

**CPSC 203:** Introduction to Problem Solving using Application Software (3 credits)  
*Prerequisite:* None  
*Antirequisite:* CPSC majors  
[Add to Plan](#)

---

**CPSC 217:** Intro to CS for Multidisciplinary Studies I (3 credits)  
*Prerequisite:* None  
*Antirequisite:* CPSC 215, CPSC 231  
[Add to Plan](#)

---

**CPSC 219:** Intro to CS for Multidisciplinary Studies II (3 credits)  
*Prerequisite:* CPSC 217 or Data Science 2  
*Antirequisite:* CPSC 233  
[Add to Plan](#)

---

**CPSC 231:** Intro to CS for CS Majors I (3 credits)  
*Prerequisite:* Admission to CS/Bioinformat

Once added you can add which semester and when you are taking the course, all added courses will appear at the bottom of the page:


**Saved plans**

---

**Plan 1: Spring 2026** [Delete](#)

- CPSC 217 - Intro to CS for Multidisciplinary Studies I (3 credits)
- CPSC 203 - Introduction to Problem Solving using Application Software (3 credits)

Next let's check out academic report:

 **UNIVERSITY OF CALGARY**

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**Home**

**Semester Builder**

**Academic Report**

**View Calendar**


**Program Guide**

**Profile**

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**Academic**

**My GPA: 3.4**

 **Completed**

[► All Req](#)

[► Min 9 C](#)

[► Min 12](#)

Here we can see all required courses, and in progress, and yet to be taken courses, we can also sort the courses based on certain criteria like grade, etc.

UNIVERSITY OF CALGARY

Search...

Logout

Home

Semester Builder

Academic Report

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Program Guide

Profile

Academic Report

My GPA: 3.40 | Min: 2.00

Completed: 48 | In-progress: 9 | Incomplete: 63

All Required Courses

Min 9 Units at 300+ Level

Min 12 Units at 400+ Level

Sort by:

COURSE	UNITS	TERM	YEAR	GRADE	STATUS
CPSC 471	3.00	Winter	2025	-	In-Progress
CPSC 481	3.00	Winter	2025	-	In-Progress
CPSC 411	3.00	Winter	2025	-	In-Progress
-	-	-	-	-	Incomplete

Min 9 Units at 500+ Level

Sort by:

STATUS

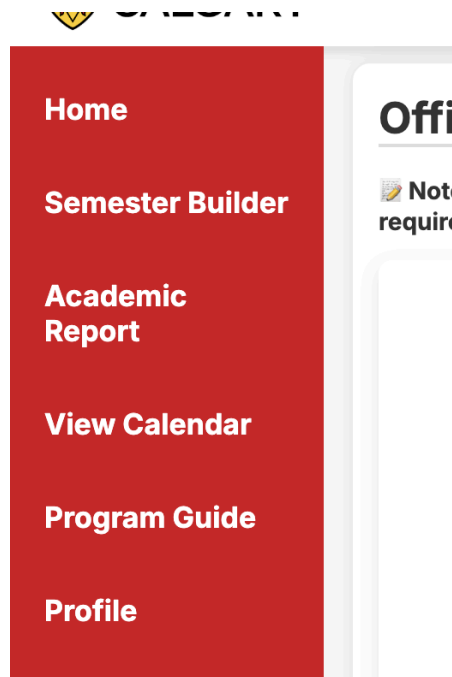
In-Progress

In-Progress

In-Progress

Incomplete

Next let's check out View calendar:





Here we can see a given students course calendar for ease of use:

## Official University Calendar

 Note: The official university calendar includes important academic dates, Course Name, Course ID, Course Hours, Prerequisite(s), Antirequisite(s), course requirements, and policies for the academic year.

Prospective StudentsCurrent StudentsAlumniMY U OF C

ENHANCED BY Google



Welcome

Important Notice and Disclaimer

Academic Schedule

Types of Credentials and Sub-Degree Nomenclature

Undergraduate Degrees with a Major

Combined Degrees

University of Calgary Calendar 2023-2024 > COURSES OF INSTRUCTION > Course Descriptions > C > Computer Science CPSC

Computer Science CPSC

CPSC 203 217 219 231 233 235 251 304 313 319 329 331 335 351 355 359 393 399 405 409 411 413 418 433 441 449 453 457 461 471 481 491 499 501 502 503 505 511 513 517 518 519 521 522 525 526 527 528 530 531 535 544 550 556 559 561 565 567 568 571 572 573 575 577 581 583 584 585 587 589 591 594 598 599 601 602 604 605 607 609 610 611 615 617 619 622 625 626 629 630 635 641 643 653 656 657 661 662 667 669 671 672 673 675 681 682 683 687 689 691 695 696 697 698 699 701 767 771 781 785 789

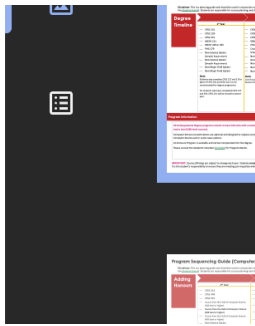
For more information about these courses, contact the Department of Computer Science: [science.ucalgary.ca/computer-science](https://science.ucalgary.ca/computer-science).


as well in the program guide, this allows for easy navigation for students:

View Calendar

Program Guide

Profile





Search...

Home

Semester Builder

Academic Report

View Calendar

Program Guide

Profile

### Program Sequencing Guide (Computer Science, Fall 2025)

Note: This guide outlines the recommended sequence of courses for Computer Science students, helping you plan your academic journey efficiently.

F25-CPSC-Guide.pdf

1 / 2

87%

1

2

#### Program Sequencing Guide (Computer Science, Fall 2025)

**Disclaimer:** This is a planning guide and should be used in conjunction with the [University of Calgary Academic Calendar](#) and the [Academic Requirements Report](#) (located in Quick Links w the [Student Centre](#)). Students are responsible for course planning and should consult with an advisor for any questions.

Degree Timeline

1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year
<ul style="list-style-type: none"><li>— CPSC 231</li><li>— CPSC 233</li><li>— CPSC 251</li><li>— MATH 211</li><li>— MATH 249 or 265</li><li>— PHIL 279</li><li>— Non-Science Option (Breadth Requirement)</li><li>— Non-Science Option (Breadth Requirement)</li><li>— Non-Major Field Option</li><li>— Non-Major Field Option</li></ul>	<ul style="list-style-type: none"><li>— CPSC 331</li><li>— CPSC 351</li><li>— CPSC 355</li><li>— SENG 300</li><li>— PHIL 314</li><li>— Course in the Field of Computer Science (300 level or higher)</li><li>— Non-Science Option (Breadth Requirement)</li><li>— Non-Major Field Option</li><li>— Non-Major Field Option</li></ul>	<ul style="list-style-type: none"><li>— CPSC 413</li><li>— CPSC 449</li><li>— CPSC 457</li><li>— Course in the Field of Computer Science (300 level or higher)</li><li>— Course in the Field of Computer Science (300 level or higher)</li><li>— Non-Science Option (Breadth Requirement)</li><li>— Non-Major Field Option</li><li>— Non-Major Field Option</li></ul>	<ul style="list-style-type: none"><li>— Course in the Field of Computer Science (400 level or higher)</li><li>— Course in the Field of Computer Science (400 level or higher)</li><li>— Course in the Field of Computer Science (400 level or higher)</li><li>— Course in the Field of Computer Science (500 level)</li><li>— Course in the Field of Computer Science (500 level)</li><li>— Non-Major Field Option</li><li>— Non-Major Field Option</li><li>— Open Option</li><li>— Open Option</li></ul>

**Note:** Students may complete CPSC 217 and 219 in place of CPSC 231 and 233, but it is not recommended for degree progression.

For students who have completed CPSC 217 and 219, CPSC 251 will be moved to second year.

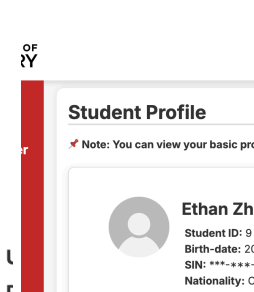
**Note:** List of courses in the Field of CPSC can be found in the [Academic Calendar](#).


finally under students lets check out the profile, here we can see all the students given information:

View Calendar

Program Guide

Profile






Search

OF

Y

### Student Profile

Note: You can view your basic profile information here and update your contact details such as your address, phone number, and p



**Ethan Zhao**  
Student ID: 9  
Birth-date: 2002-04-12  
SIN: \*\*\*\*-\*\*\*-456  
Nationality: Canadian  
Permanent Address: 234 Birch St, Calgary  
Phone Number: 403-555-8888

UofC Email: ethanzhao@email.com

Personal Email:

Phone(s):

Address:

Add/Update Address

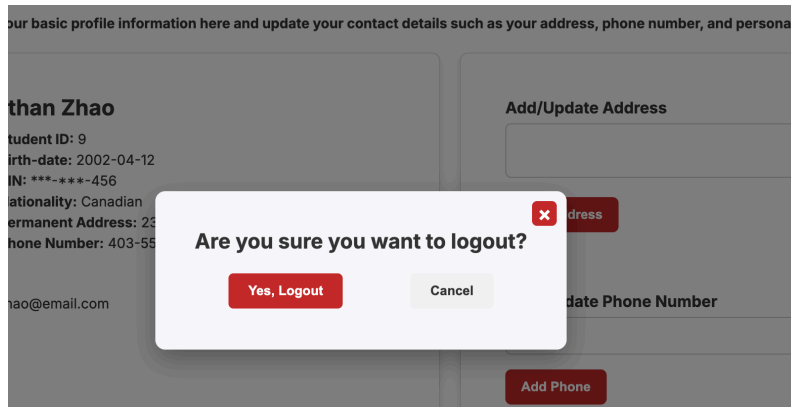
Add Address

Add/Update Phone Number

Add Phone

Add/Update Personal Email

Now lets logout, simply press in the top right corner the logout button:



Now if you want to try logging in with a different students account try:

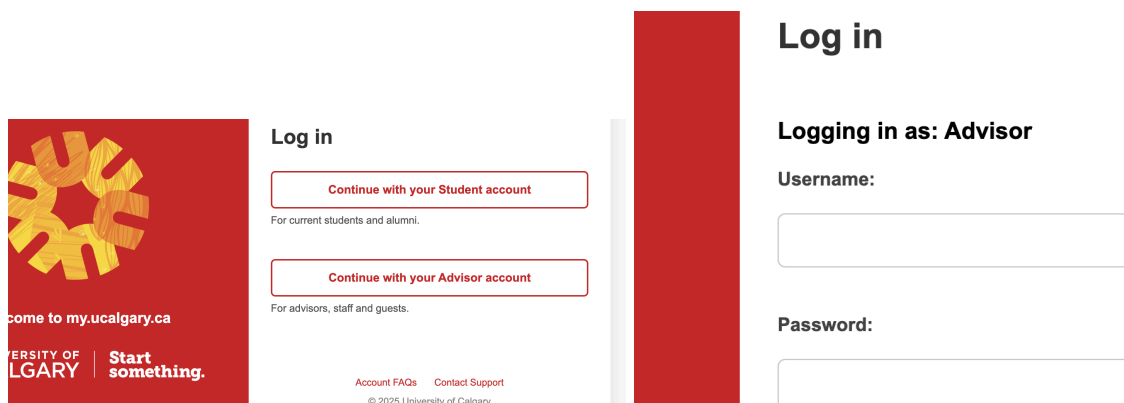
Student:

User: mayas

Pass: mayasspass

This will show you a completely different student dashboard with different meetings, and courses taking etc.

Now let's head over to the Advisor login and explore:



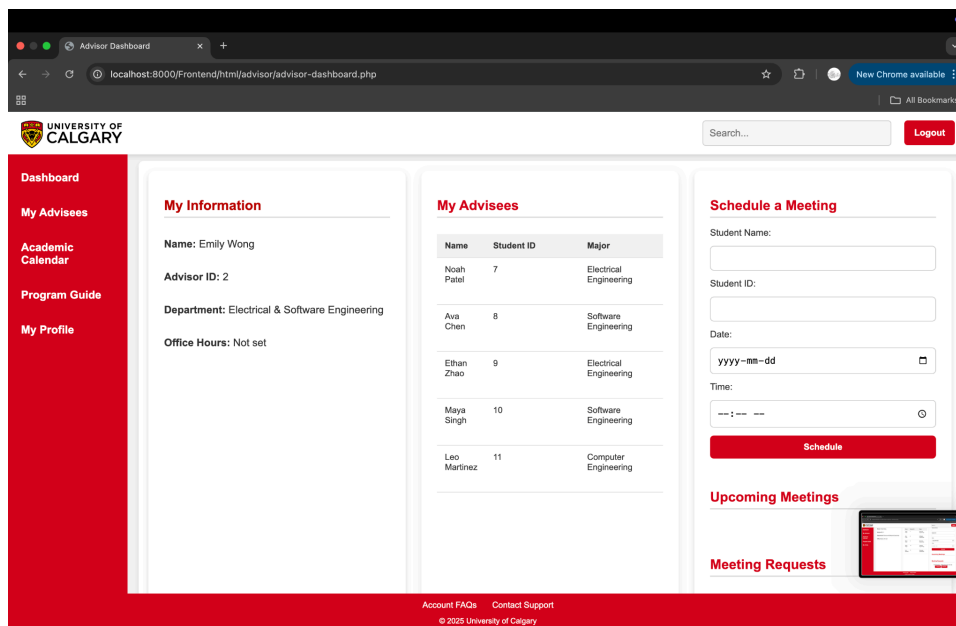
We have two advisor accounts, for this demo lets login into:

Advisor:

user: ewong

pass: advisorpass

Here we have the main Advisor dashboard,



Check out the meeting requests, remember from earlier when we created a meeting, well we can now accept or decline that students meeting:

## Meeting Requests

- Ethan Zhao – 2025-04-17 @ 17:01:00

✓ Accept

✗ Decline

We can also directly create scheduled meetings, try inputting the following under schedule meetings:

Name:

Maya Singh

ID:

10

Date:

Anything

Time:

Anything

That created meeting will instantly show up in upcoming meetings:

## Upcoming Meetings

---

• Ethan Zhao – 2025-05-08 @ 18:14:00

 Edit

 Del

From here you can update and change the meeting.

This information will automatically show up under the given students portal, so for example under Ethan Zhao's profile in this picture we see this if logged into his account:

- **2025-05-08 18:14:00 with Advisor ID 2 [accepted]**

Next under the My advisees tab we can quickly and easily access all advisees information, including name, student id, email, etc:

Name	Student ID	Major
Noah Patel	7	Electrical Engineering
Ava Chen	8	Software Engineering
Ethan Zhao	9	Electrical Engineering
Maya Singh	10	Software Engineering
Leo Martinez	11	Computer Engineering

**My Advisees**

Major	Minor	Email
Electrical Engineering	Robotics	Show Email
Software Engineering	Business	Show Email
Electrical Engineering	AI	Show Email
Software Engineering	Psychology	Show Email
Computer Engineering	Economics	Show Email

Under the my advisees tab:

**Dashboard**

**My Advisees**

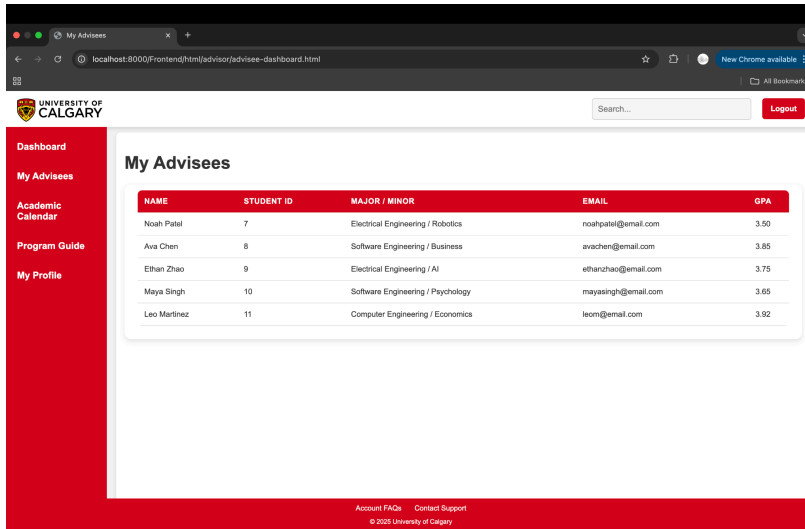
**Academic Calendar**

**Program Guide**

**My Profile**



We can easily see all a given advisors advisees:

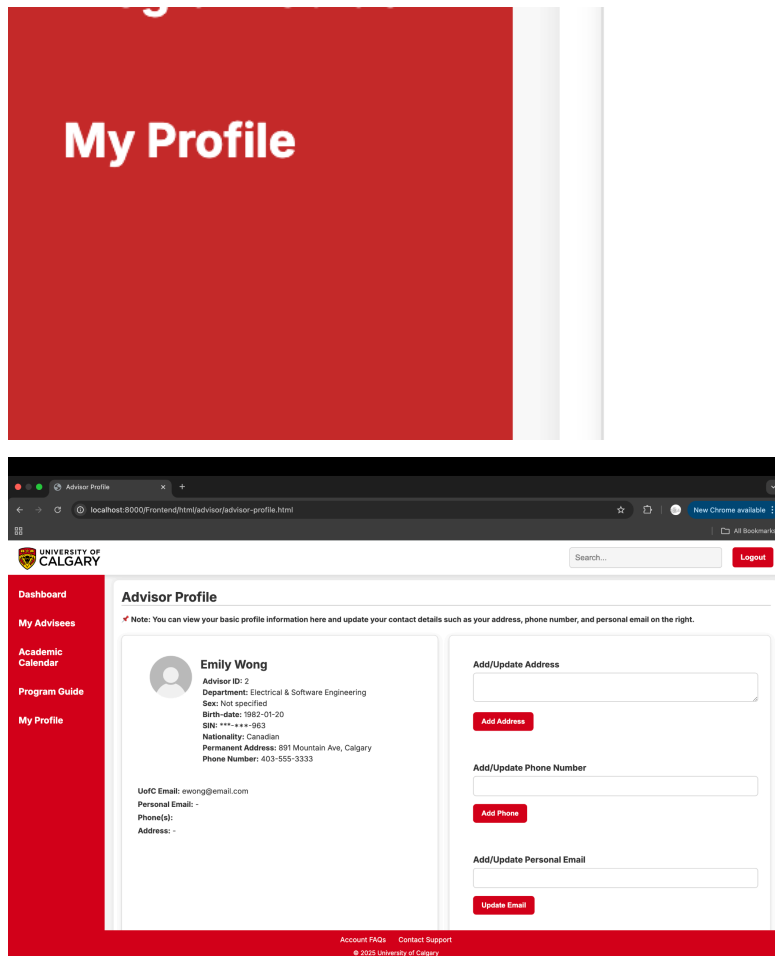


NAME	STUDENT ID	MAJOR / MINOR	EMAIL	GPA
Noah Patel	7	Electrical Engineering / Robotics	noahpatel@email.com	3.50
Ava Chen	8	Software Engineering / Business	avachen@email.com	3.85
Ethan Zhao	9	Electrical Engineering / AI	ethanzhao@email.com	3.75
Maya Singh	10	Software Engineering / Psychology	mayasingh@email.com	3.65
Leo Martinez	11	Computer Engineering / Economics	leon@email.com	3.92

Lastly we also included course calender and program guide, so advisors can easily make changes to students profiles if needed:



We also have profile which displays all advisor profile info:



That's the demo!