

## Project Phase III: Earl Technologies, High Fidelity



### Introduction

After the implementation of our low fidelity prototypes for CompanionCalendar with the Balsamiq prototyping technology, it was time for Earl Technologies to commence Phase 3 of the design process: High Fidelity Prototypes. The first step to conceiving a high-fidelity prototype/design was to select a tool/framework with enough flexibility and innovation so that the users may “interact” with the interface. After discussion and many propositions, the Earl Technologies Development team chose **proto.io** for the high-fidelity implementation. Since the CompanionCalendar is an immense project with many different features, a full-scale implementation would’ve been of reduced quality due to time and resource constraints. However, the result of proto.io is very convincing in relation to having a working solution and may be implemented into a full source code solution when time and resources are allocated for the Earl Technologies Development team.

### Proto.io information

The average stakeholder would be dissatisfied with a high-fidelity prototype that isn’t coded from scratch. However, proto.io is a revolutionary online toolkit used by thousands of professional companies to develop prototypes (**Figure 1**). With a fully immersive prototyping experience, proto.io delivers professional grade interaction design, that Earl Technologies has vastly capitalized upon for the stakeholder and user needs, experience and requirements referenced in this project phase.’

## Figure 1: proto.io professional reviews



"Proto.io is our tool of choice for prototyping mobile interactions in the concept phase. I found the custom transitions especially helpful in articulating the vision of the app to both customers and stakeholders."



**Loredana Crisan**

Director of Mobile Design

### NORDSTROM

"Proto.io lets my team create near-native experiences for user research and stakeholder presentations. This makes it very easy for us to communicate ideas effectively and get quick buy-in on new features."



**Darren Ellis**

UX Design Manager

### FJORD™

"It helps us to develop a realistic prototype with complex features quickly. This leads to a very powerful demo for client buy-in of the design."



**Daniel Serrano**

Design Lead

## **Index/Legend**

This index was created for easy navigation for stakeholders and interested users. Feel free to reference this section to quickly jump and reference to different features/pages of the CompanionCalendar. Each section is referenced by a number and will have a header displaying the feature in large font along with corresponding number.

### **Chronological Order:**

- **1: Login**
- **2: Main Menu – Student Mode**
- **3: Main Menu – Administration Mode**
- **4: Help**
- **5: Course Scheduler – Future Courses**
- **6: Course Scheduler – Daily TimeTable**
- **7: Course Scheduler – Degree Map Creator**
- **8: Course Scheduler – Saved Degree Maps**

# 1: LOGIN

As with most applications requiring personal data, the CompanionCalendar requires users to login before using the application. This is due to many reasons, most notably that there are multiple types of users that the CompanionCalendar authorizes usage for, each with their own different functionalities. The CompanionCalendar references the UVIC database to authorize the Netlink ID of each type of user. Specifically, there are three main types of users that the CompanionCalendar allows. **(Figure 3)**

Firstly, and easily the most notable/common user; The Student. The Student Login prompts a student to login with their Netlink ID and password. This opens a standard requirement to use the application that was mentioned in our User Requirements. The requirement is that the CompanionCalendar may be only used by Uvic Students, Staff or Parents/Guardians of students with authorized consent.

Second, the Admin/Staff Login. An Administrative Netlink ID checks off a data field in the UVIC Database, so only a true Staff or Faculty Member may access the Administrative Mode of the CompanionCalendar.

Third, the Parent Login. For parents to monitor classes and review the transcripts of their child, they must receive the credentials/permission to access this information.

If a Student, Admin/Staff or Parent require any additional aid, they may tap on the question mark symbol next to the specific "Login" title. A help screen will pop up, explaining the process of logging in relevant to the type of user they are. **(Figure 4)**. For instance, Admin/Staff may only login if their Netlink ID is marked to be an administrative Netlink ID within the UVIC Database. Therefore, each type of user will have a different range of functionalities. If a Student, Admin/Staff or Parent has entered incorrect credentials, an error message displaying that the entered credentials do not match the UVIC database. **(Figure 5)**. The error message contains a redirection link to the UVIC Website, as well as a "try again" button if the Student simply mistyped their credentials. For aesthetic purposes, there is an Earl Technologies logo located near the bottom of the login page.

20:55

## Companion Calendar

### Student Login ?

Netlink ID

Password

Remember Me? ☒

Login

### Parent Login ?

Child's Netlink ID

Password

Remember Me? ☒

Login

### Admin Login ?

Netlink ID

Password

Remember Me? ☒

Login


  
Earl Technologies

Figure 3.1: The login features three different options as well as a “Remember Me” Ticker for User Efficiency.



Figure 3.2: Upon tapping any of the text fields, a keypad shows up allowing the user to type.



Figure 4.1: Student Login Help

20:55

# Companion Calendar

## Student Login ?

Netlink ID

Password

Remember Me? ☒

Login

## Parent Login ?

Child Admin Login - Help

The Administrative Login is Designated for administrators who wish to modify Companion Calendar Data, Please enter your Netlink ID and password to begin modifying data.

OK

## Admin Login ?

Netlink ID

Password

Remember Me? ☒

Login

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Figure 4.2: Admin Login Help



20:55

# Companion Calendar

## Student Login ?

Netlink ID

Password

Remember Me? ☒

Login

## Parent Login ?

Child Parent Login - Help

The Parent Login is designated for parents/guardians with children currently enrolled at the University of Victoria, Please, with permission, enter your childs netlink ID and password to browse future courses, degree maps, and your childs daily timetable,

OK

## Admin Login ?

Netlink ID

Password

Remember Me? ☒

Login

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Figure 4.3: Parent Login Help

The image displays a mobile application interface for 'Companion Calendar'. It features three distinct login sections, each with a title, input fields, a 'Remember Me?' checkbox, and a 'Login' button. The top section is 'Student Login', showing an invalid Netlink ID. The middle section is 'Parent Login', displaying an error message about incorrect Netlink ID or password. The bottom section is 'Admin Login', with empty input fields. A green logo for 'Earl Technologies' is at the bottom.

21:08

## Companion Calendar

### Student Login ?

InvalidNetlink123

\*\*\*\*\*

Remember Me? ☒

Login

### Parent Login ?

Child's Netlink ID Error!

Your Netlink ID or password was incorrect, please try again or click the register button to be redirected to the UVIC Netlink ID Creation process.

OK REGISTER

### Admin Login ?

Netlink ID

Password

Remember Me? ☒

Login


  
Earl Technologies

Figure 5: Error with Incorrect User Credentials

## 2: Student main menu

After successfully logging in, users will encounter a specifically designed main menu based on the usability goals of the specific user (Student, Parent, Admin (Prof)).

The Student Main Menu is the first interface students will encounter after logging in. **(FIGURE 6)**. Here, Announcements imperative to student success are posted. Reminders such as course registration approaching, which was a specification provided in the User Needs:

“Reminders for students signed up through UVIC and personal email that course registration is approaching.”

As well as Number 5 In the User Requirements:

“Notify the student and remind them before course registration begins, reminding them to sign up for their respective planned term courses.”

Students are first greeted with an indicating Main Menu header at the top of the page. On the right of the parsed welcome message is a Question Mark Symbol which explains the functionalities of the main menu. **(FIGURE 7)**

On the left of the Main Menu header is the navigation bars which allow quick navigation to other features. **(FIGURE 8)**

Underneath the header is a cover flow, which users may browse by swiping left and right. Tapping Each cover flow square redirects to a new feature and contains a question mark in the bottom right corner to display information about that feature. Each flow square also contains information by tapping on the question mark in the top right of the screen.

Below the cover flow is a scrollable announcement board, which provides students with information regarding UVIC courses. Users may toggle the announcement board into a menu selector, which displays features and quick summaries **(FIGURE 9)**.

What’s interesting is that **NO** main menu was designed or thought of in our user requirements for **P1**, so the implementation of one was mandatory for **P3**



Figure 6: Main Menu For Students

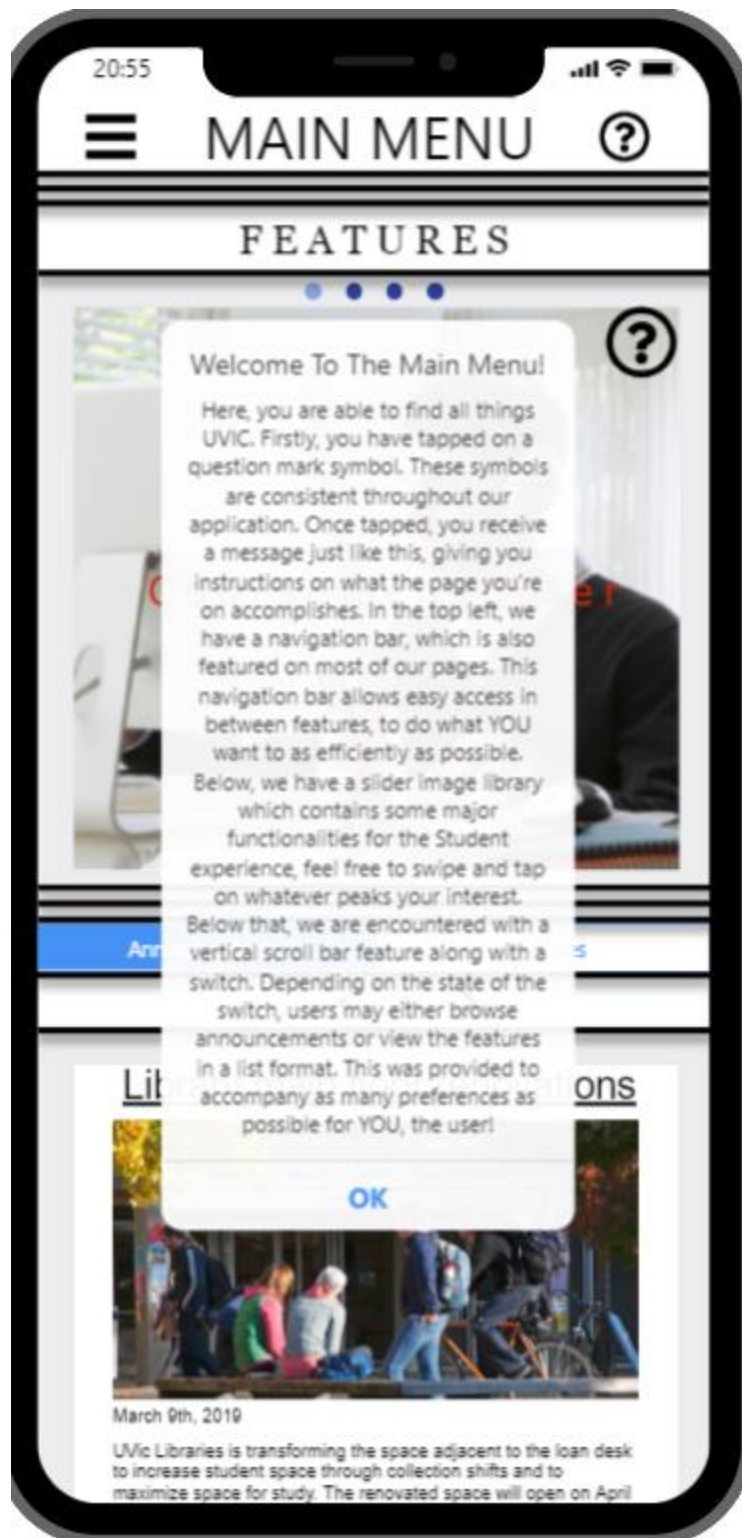


Figure 7: Student Main Menu Help

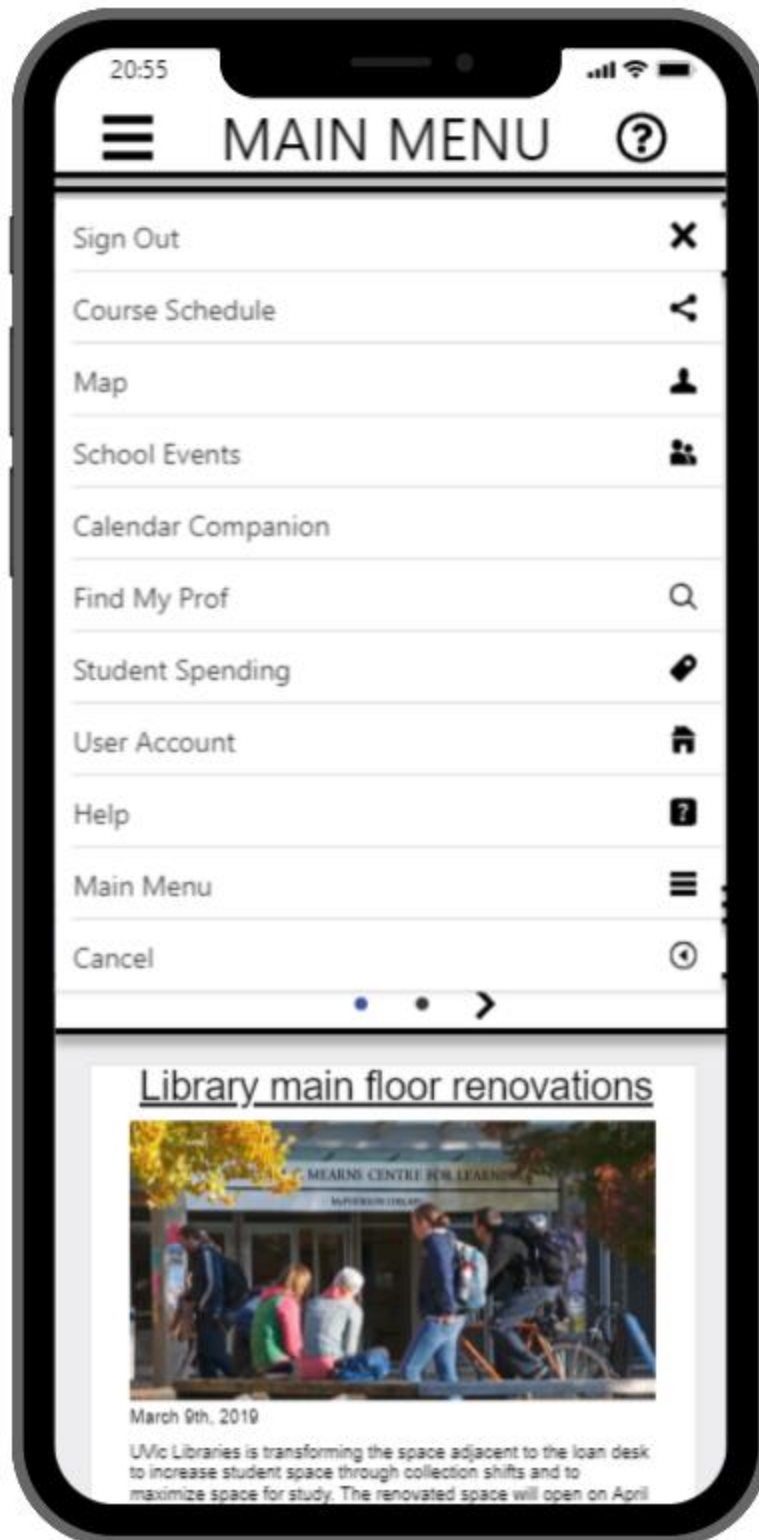


Figure 8: Student Main Menu Nav Bar

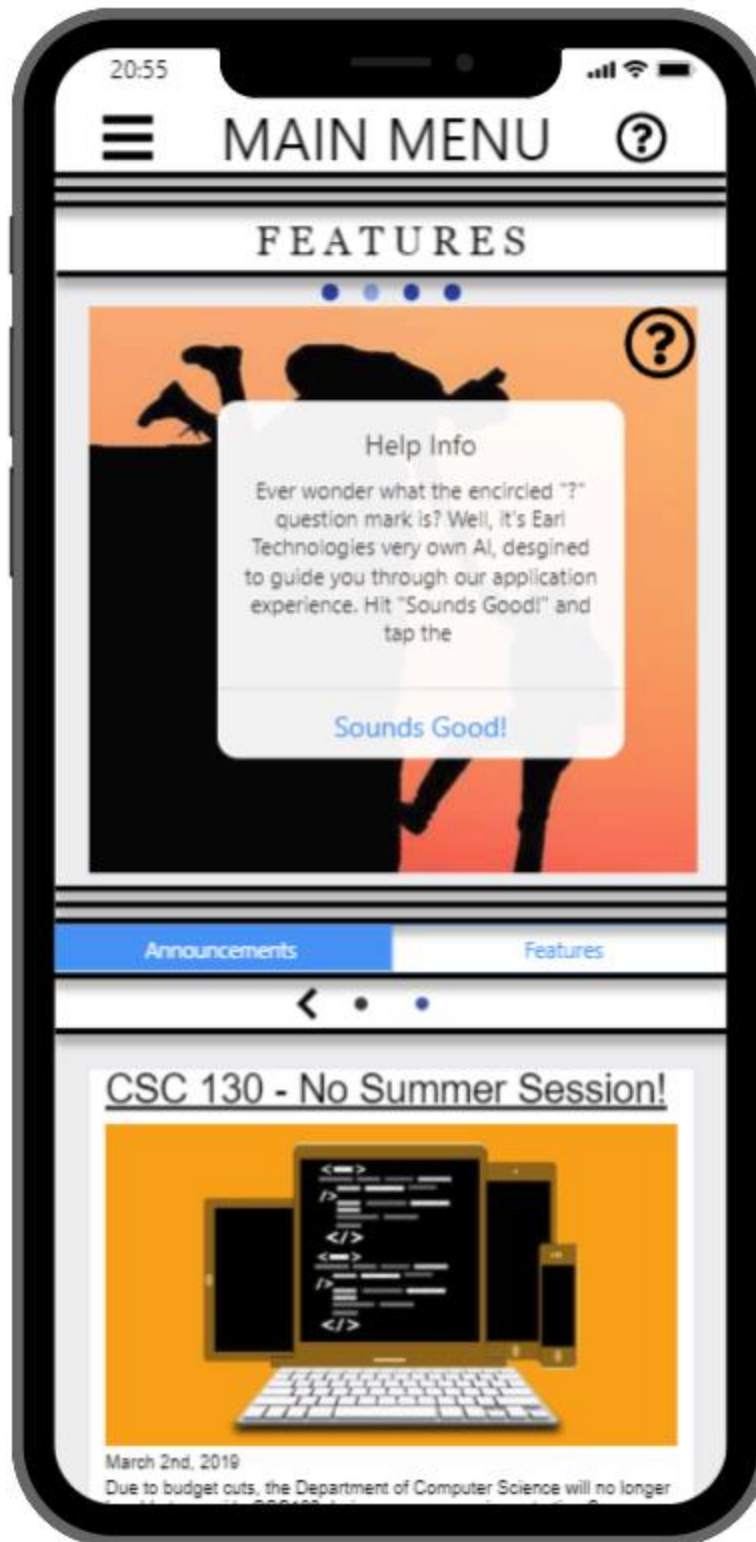


Figure 9: Using the cover flow and the scrollable announcement feature/menu in the lower half of the screen

## 3: Admin main menu

Opposed to the Student Main Menu, The Admin Main Menu provides two main Functionalities. Editing (Adding/Deleting) Announcements and Editing (Introducing/Discontinuing) Courses. The announcements are merely informative data and do not have a direct effect on any of the students timetables courses. However, the action of manipulating courses in the UVIC database is achievable through this menu. This was a Major Requirement in P1, specifically noted in **User Requirements:**

### **Student Section 8**

If a course is deemed terminated for a specific degree requirement, the application will notify the user, and again offer a suggested course or ability to choose a course manually.

### **Admin Section 2**

CourseCompanion admin mode will allow the ability to update new courses and lecture sections, or to remove such courses or lecture sections, and to cascade such changes across all current CourseCompanion user account to reflect changes and possible options.

The Admin Main Menu looks peculiarly like the Student main menu except the Cover flow is removed with announcement and course modifications (**Figure 10**).

The announcement section remains so Admins may easily view recently posted announcements and how they would display to students.

The navigation bar (top left) offers all functionalities for admins displayed in the interface. As well as the Sign out option (**Figure 11**)

Admins may either add or delete announcements or add and delete courses. For announcements, admins may add a photo if they'd like to amplify the announcement. (**Figure 12**). If a user is confused they can tap on the question mark icon to open an informative message (**Figure 13**).



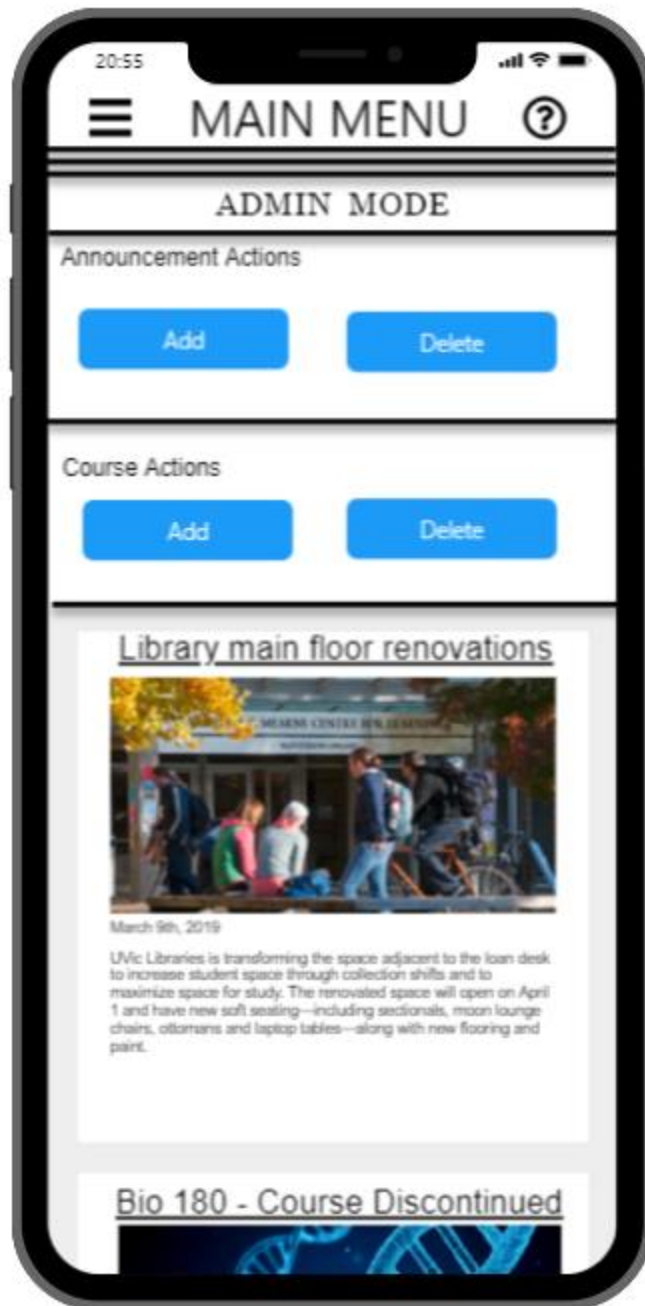


Figure 10: Admin main menu



Figure 10.1: Admin main menu help

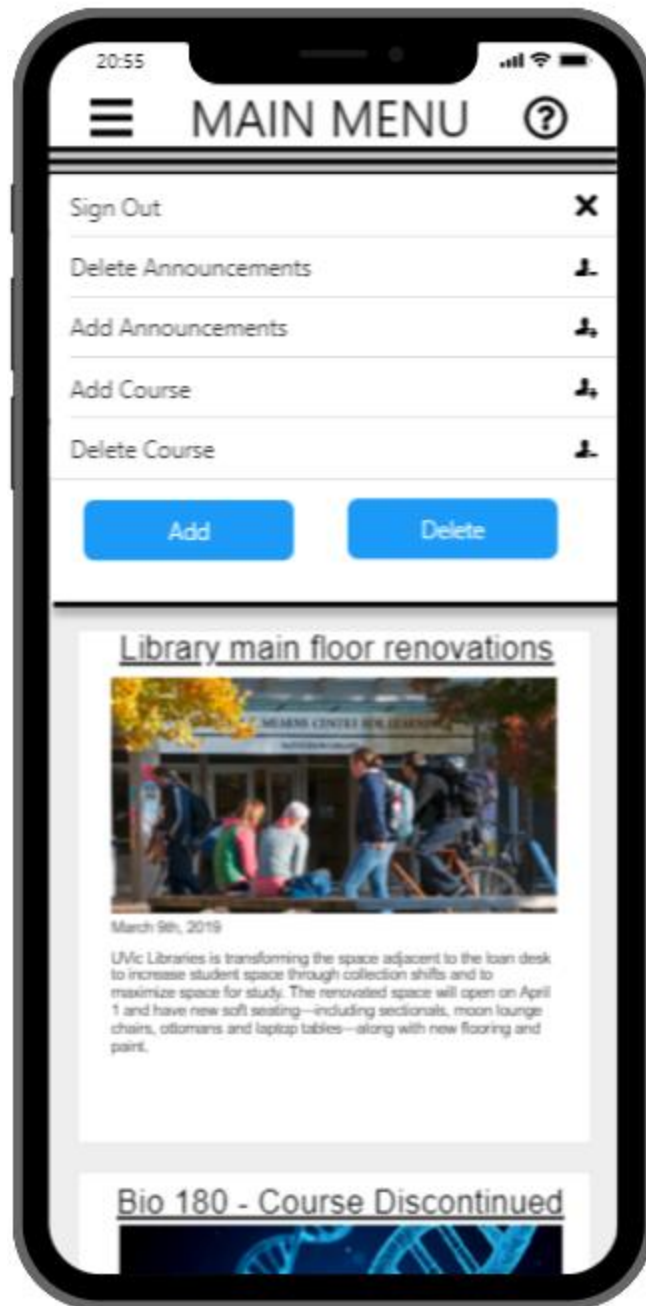


Figure 11: Admin Nav Menu

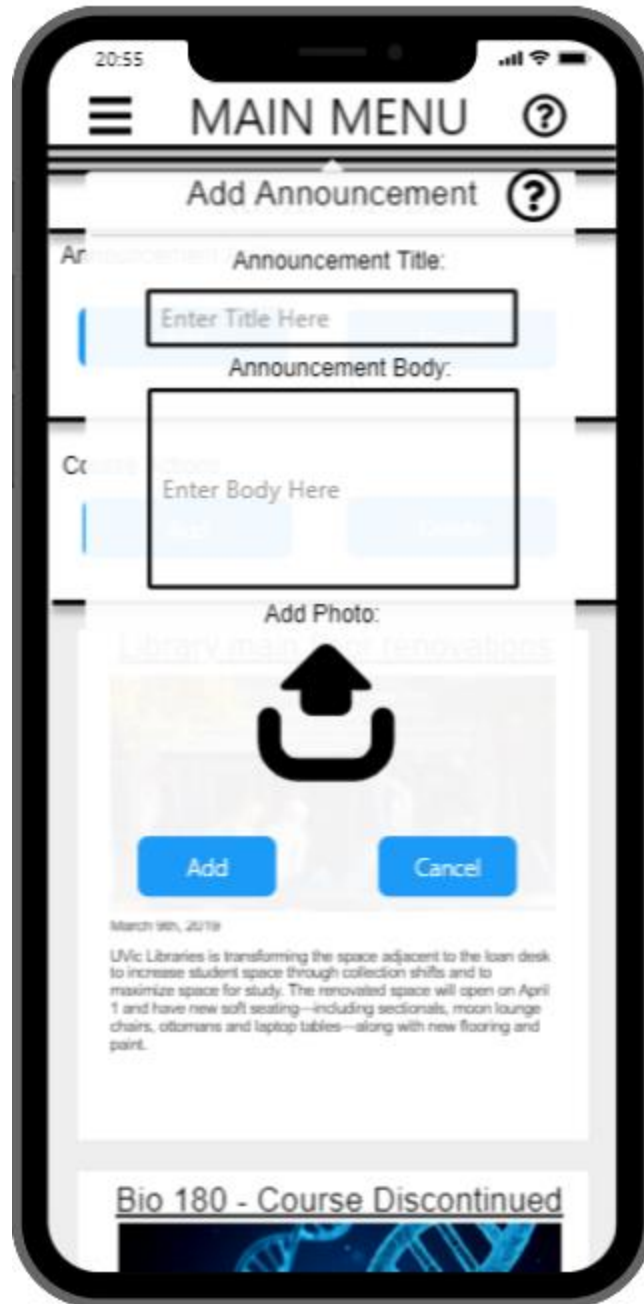


Figure 12: Adding an announcement, one of four main features on the Admin Main Menu

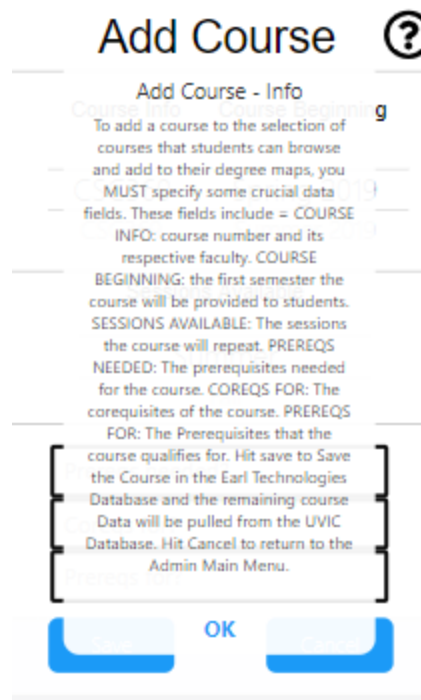


Figure 13: Even the admin functionalities have information provided

## 4: Help

In case you require any assistance, Earl Technologies has got you covered! Throughout the entire applications users will encounter small question marks next to functions. These questions marks are intended to be explanations as to what that function accomplishes. (**Figure 14**)

The Help feature covers all **three aspects of user experience goals**.

**1)Helpful** – Whenever a user is stuck or confused on what to do the Question Mark System may point them in the right direction.

**2)Motivating** – Being stuck often creates no motivation, but the tone that the Question Mark System speaks and directs users is enthusiastic and intended to have gain user interest in the application.

**3)Not frustrating** – Unambiguous icon display, the question mark means explanation. Low misinformation, very detailed guides provided by Question Mark System. Even the Question Mark System homepage has a question mark to click on. (**Figure 15**).

**Aswell**, to reference user requirements **2.2** is achieved using the help system.

“Whether a user is stuck navigating through the application or is having trouble setting up a semester, the Virtual Assistant will be able to resolve any difficulties encountered.”

Furthermore, there is a tutorial links that opens a new page to help students learn more about the functionality of the application (**Figure 16**).



Figure 14: Help page

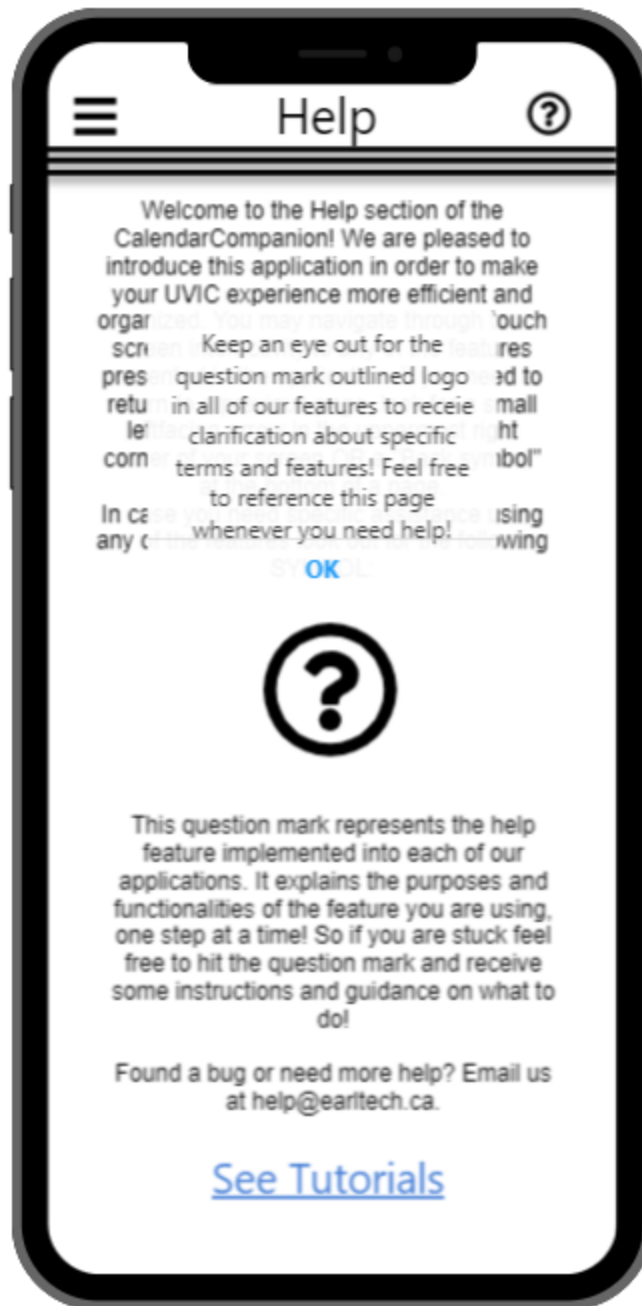


Figure 15: Help available on the Help Page



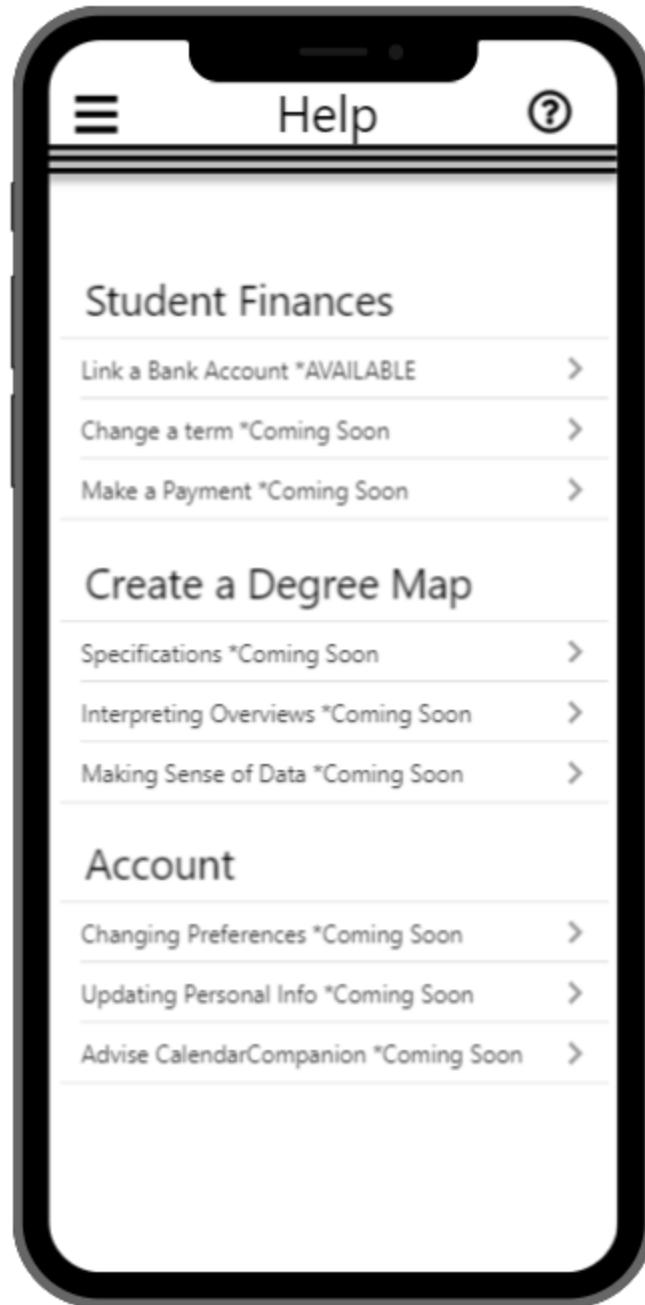


Figure 16: Tutorials screen after tapping the See Tutorials on Figure 14.

## 5: Course Scheduler – Future Courses

From here on, the following features are accessible to any student at UVIC, and potentially other schools further down our design timeline.

The Course Schedule menu offers four features that are offered by the CompanionCalendar. The four features are:

- Future Courses
- Daily TimeTable
- Create a Degree Map
- My saved Degree Maps

The navigation bar to venture to different menus and features is available in the top left. The top right contains a question mark for help, as well as a left facing arrow to return to the previous **Main Menu-Student**, where the Course Schedule menu can be tapped through the interactive cover flow. Upon tapping one of the four feature buttons in the course schedule menu, it will begin acting on that feature. As well, a randomly generated motivational quote is selected to display at the top of the menu. (**Figure 17**).

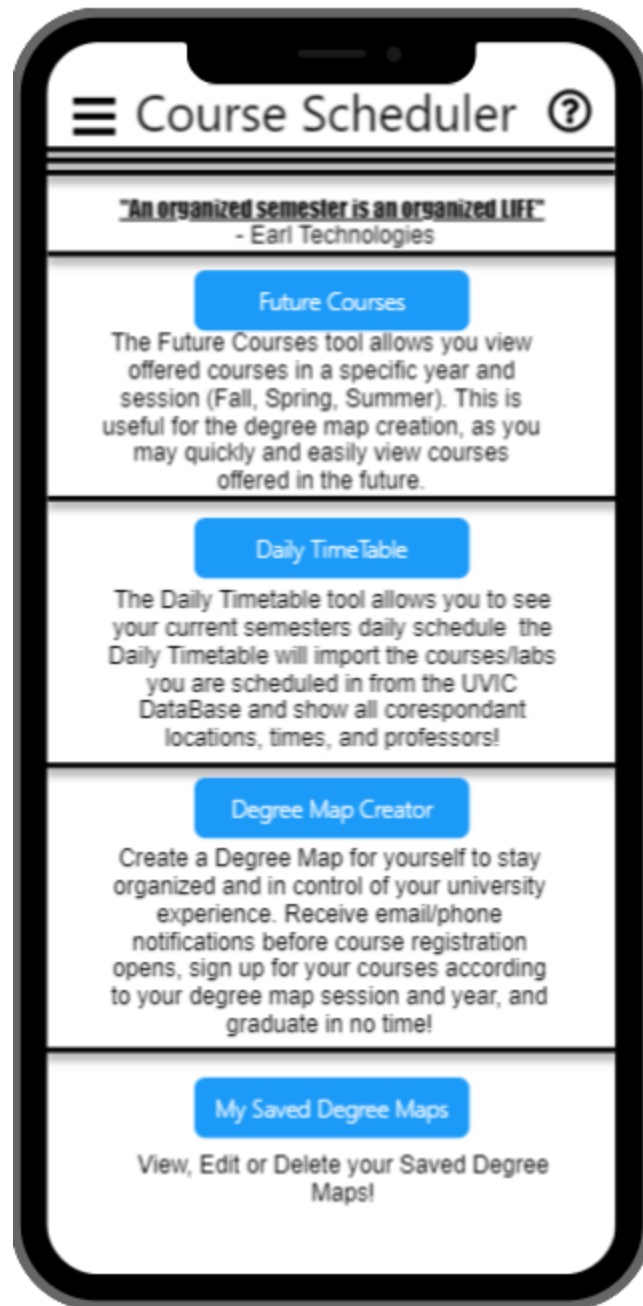


Figure 17.1: Course Scheduler, attainable from the quick nav bar in the top left corner or the cover flow on Student – Main Menu

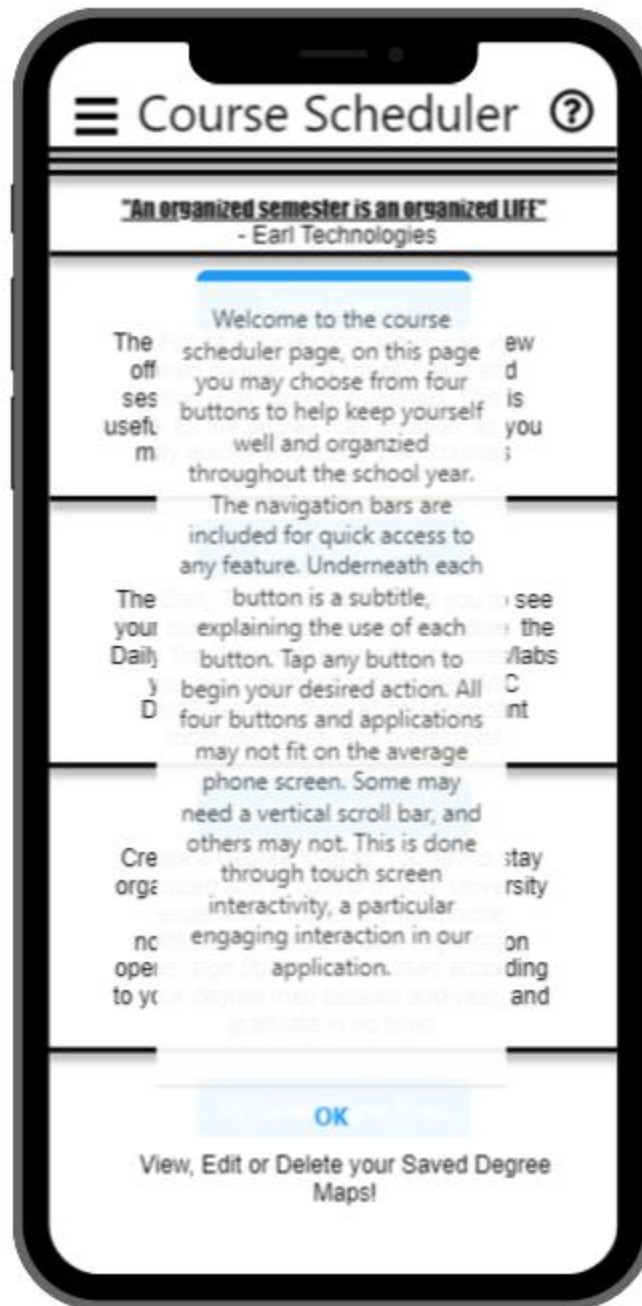


Figure 17.2: Help for the Course Scheduler

This tool is intended for students who wish to see courses offered by UVIC in future semesters and years. The tool is useful for the Degree Map when generating or selecting courses in the future to add or delete from the Map.

Note that every time a new page or feature is opened it displays the page title at the header of the page. Similarly, there is a small left facing arrow located on the page. It is usually located next to the help button (**Figure 18**). This arrow returns user to the previous page and acts as a “back” button.



Figure 18: Future Courses Help

After tapping the Future Courses button on the Course Schedule main menu interface, users are redirected to the Future Courses page. This is where they begin the process of exploring for future courses UVIC has to offer (**Figure 19**).

Future Courses

**FILTERS**

Find out if a course is available in a specific year or semester down the road! Press SEARCH when ready or SKIP to view all courses currently available

**SPECIFY A SESSION**

As some courses are not offered in a specific session, we ask you for which session (Spring/Fall/Summer) you intend to take it.

Fall

Spring

Current Session

Summer and Spring

Summer and Fall

**SPECIFY A YEAR**

Some courses are not offered in all years, this helps narrow down if a course you would like to take will be discontinued by a certain year.

2020

2021

2022

2023

2024

SEARCH

OR

SKIP

Figure 19: Future Courses page

Students have multiple options to investigate future courses. They may either specify a session and year. (**Figure 20**). Or, skip the session and year to directly view courses available for the current term which is calculated via the phones operating system (**Figure 21**)

The image shows a mobile app prototype for 'Future Courses'. At the top, there is a hamburger menu icon, the title 'Future Courses', a back arrow, and a help icon. Below this is a 'FILTERS' section with a descriptive text: 'Find out if a course is available in a specific year or semester down the road! Press SEARCH when ready or SKIP to view all courses currently available'. A dialog box titled 'SPECIFY A SESSION' is open, explaining that users can filter by session (e.g., summer) and that this helps identify courses not available in all years. The dialog has an 'OK' button. Below the dialog, there is a list of years from 2020 to 2024. At the bottom of the app, there are three buttons: 'SEARCH', 'OR', and 'SKIP', with a help icon next to the 'SKIP' button.

Future Courses

**FILTERS**

Find out if a course is available in a specific year or semester down the road! Press SEARCH when ready or SKIP to view all courses currently available

**SPECIFY A SESSION**

You may filter your future course results in a number of ways. One is through session specifications. This was implemented to identify courses that are not available through all sessions (Spring/Summer/Fall). This way students may delicately pinpoint inaccuracies in their "timetables" provided by UVIC.

As some we ask

2 session. (summer)

OK

Some courses are not offered in all years, this helps narrow down if a course you would like to take will be discontinued by a certain year.

2020

2021

2022

2023

2024

SEARCH

OR

SKIP

Figure 20.1: Specify a Session Information



Figure 20.2: Specify a year information



The image shows a mobile app interface for 'Future Courses'. At the top, there is a hamburger menu icon and a back arrow with a question mark. Below this is a 'FILTERS' section with a descriptive text: 'Find out if a course is available in a specific year or semester down the road! Press SEARCH when ready or SKIP to view all courses currently available'. The next section is 'SPECIFY A SESSION' with a question mark icon, followed by a text explanation: 'As some courses are not offered in a specific session, we ask you for which session (Spring/Fall/Summer) you intend to take it.' Below this are five radio button options: 'Fall', 'Spring', 'Current Session', 'Summer and Spring', and 'Summer and Fall'. The following section is 'SPECIFY A YEAR' with a question mark icon, followed by a text explanation: 'Some courses are not offered in all years, this helps narrow down if a course you would like to take will be discontinued by a certain year.' Below this is a text input field with a placeholder: 'In case you don't require filters and would like to see all courses currently available, hit Skip!'. At the bottom, there are three main buttons: a blue 'SEARCH' button, an 'OR' text label, and a blue 'SKIP' button with a question mark icon to its right.

Figure 20.1: Skip information

Upon tapping the Search button (and specifying session and year) or Skip button, both in Figure 20, users will be directed to a new Tool, the Faculty Selector. (Figure 21)

The Faculty Selector displays the term that has been selected from the previous page in Figure 20.

In case a user would like to quickly change the term or session being displayed they can hit the left facing arrow in the top right corner. There is also help from the question mark system available. (**Figure 22**).



Figure 21: Faculty Selector

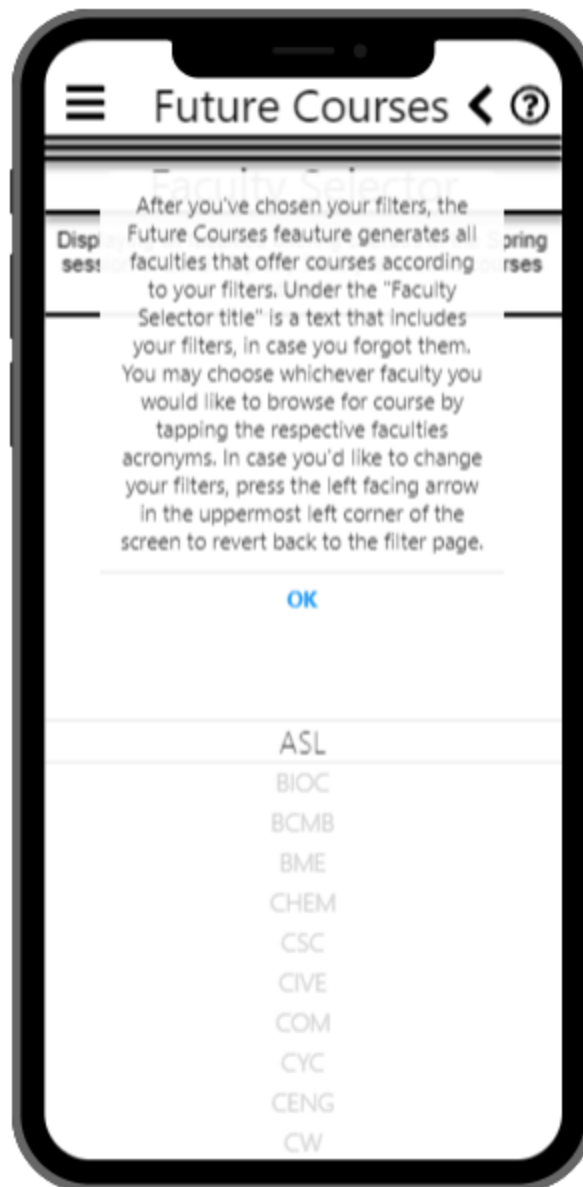


Figure 22: Faculty Selector

The courses are generated from the UVIC Database.

To view courses for a specific Faculty, simply tap and you will be redirected to a new page titled "Course Selector" (Figure 23).



Figure 23: Course Selector

In **Figure 23**, all courses available for the chosen faculty, year and session will display in a list format. Information and an arrow to return to the previous Future Courses page is available (**Figure 24**). To expand and learn more information about a course, simply tap the course and a pop up will expand listing specifics about the tapped course (**Figure 25**).

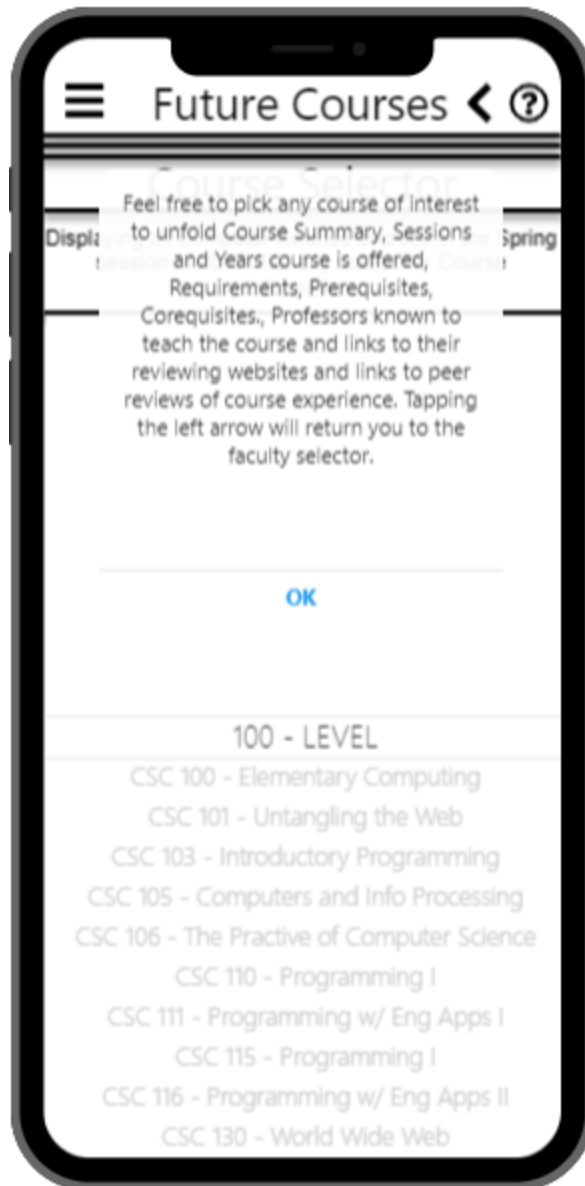


Figure 24: Course Selector Help

In **Figure 25**, users learn tons of course information about the tapped course from the course selector. There are also hyperlinks available that open webpages. The hyperlinks are for



Figure 25: Course Selector

There is also help/information available on the page displayed in **Figure 25**. (**Figure 26**)

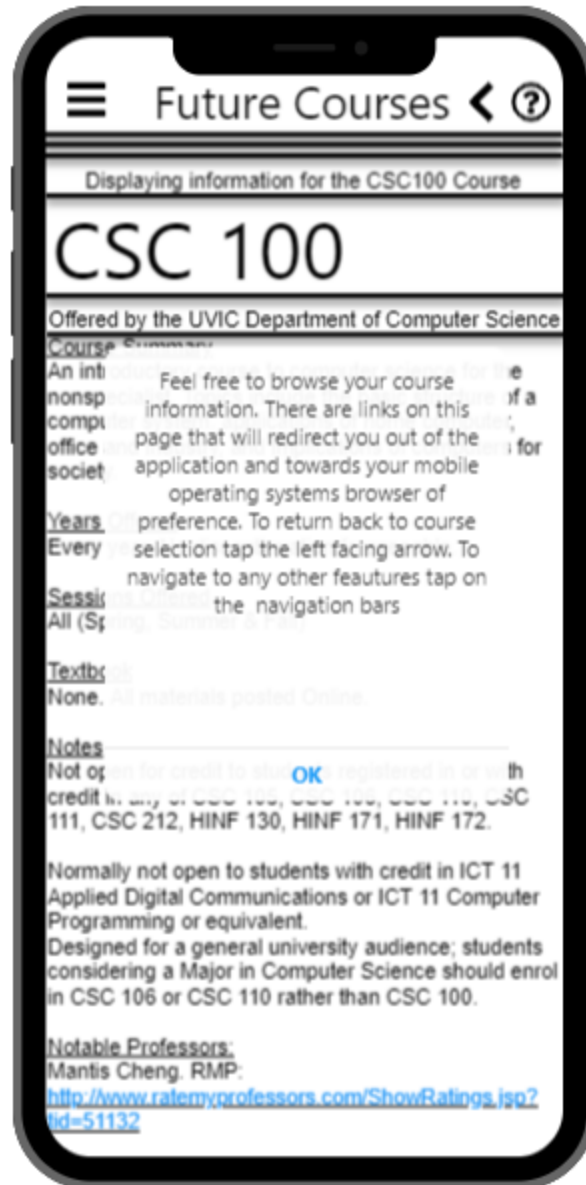


Figure 26: Course Selector Help

## 6: Course Scheduler – Daily Timetable

The Daily Timetable is a way for students to view the current, previous or future schedule of a student's day. This was implemented for students to stay organized and be informed about class times, professors, locations, schedules and more! Users may also create reminders and see expand the map to see where their class is located. More of this is covered in the Map Section. (**Figure 28**).

First, there is a left facing arrow that is easily accessed from the top right corner of the screen that redirects the page to the Course Schedule menu (**Figure 17**). There is also an information pop up displayed when tapping on the Question mark. (**Figure 29**)

In **Figure 28**, the current data is automatically displayed along with the respective enrolled course schedule for the day. Students can navigate through dates and display their respective courses via the left and right arrows on the sides of the Date.





Figure 28: Daily Timetable

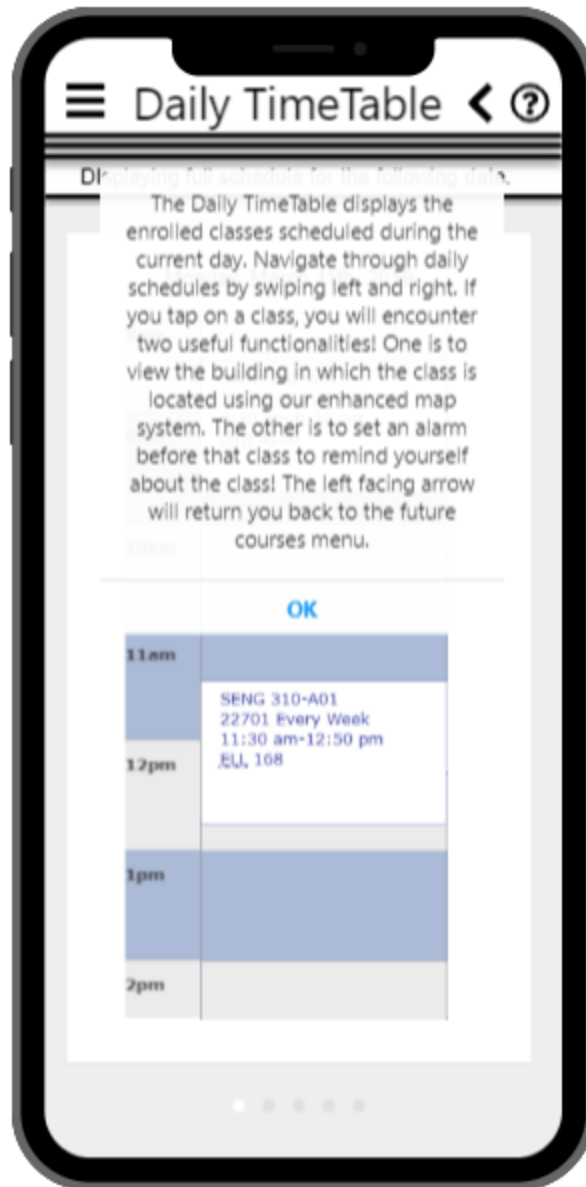


Figure 29: Daily Timetable info

Further functionalities exist on the Daily TimeTable. This includes the option to set reminders before course times and as well a map function to display where that course is located on the UVIC MAP. There is also a cancel option available in case a user changes their mind. You can access these functionalities through a pop up which is opened by tapping on the class of choice. (Figure 30).



Figure 30; Daily Timeable Functionality

The Set Reminders feature is accessible by tap, as well with the View On Map feature. The View On Map Feature will redirect you to the Map section of the Application. The Set Reminders feature will open a pop up with instructions and specifications about the reminder you are trying to set. (**Figure 31**).

The Alarm/Reminder provides a left facing arrow which takes the user back to the Daily TimeTable, as well as information (**Figure 32**).

Users can modify alarm volume, time, toggle buzz frequency, and choose the days in which they would like the alarm to sound. Users can also create a custom message for their alarm.

Beneath the keyboard in **Figure 31** is a save button. Users can only have one alarm per class. So, adding a new one will delete the previous one. To delete an alarm simply hit delete alarm underneath the keyboard.

The image shows a mobile application interface for setting an alarm. At the top, there is a header with a hamburger menu icon, the title "Daily TimeTable", a back arrow, and a help icon. Below the header, a section titled "Setting alarm for the following course" displays "MATH 202, 830am - 930am, TWF". The interface includes an "Alarm Volume" slider, a "Buzzer" toggle switch, and a "Minutes to be reminded before class" selector with options from 5 to 90. Under "Alarm Dates", a list of days from Monday to Friday is shown, with Tuesday and Wednesday selected and marked with checkmarks. A "Custom Message" section contains a text input field with the placeholder "Enter your custom message here!". At the bottom, there is a prominent blue "Save!" button.

Figure 31.1: Daily Timetable Alarm

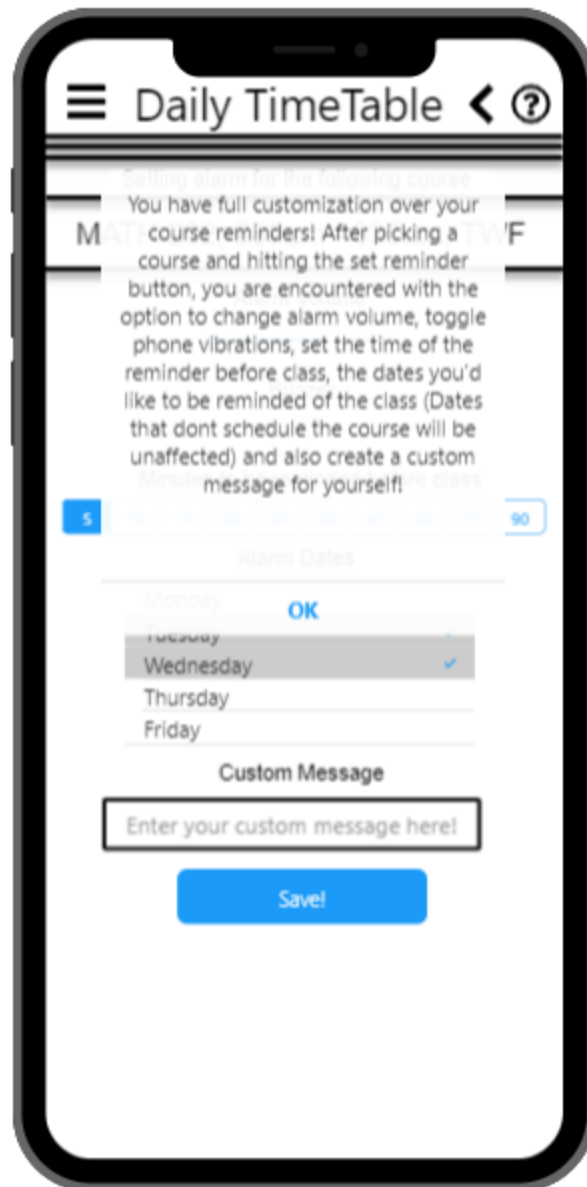


Figure 31.2: Daily TimeTable Information.

# 7: Course Scheduler – Degree Map Creator

The Degree Map Creator is one of the most complex yet useful and important features of the application. It directly integrates most of the user requirements from the original vision of P1. If not directly, it touches on the requirements with a very faint variation.

The following **DMC REQUIREMENTS** will be referenced during the Degree Map Creator explanation to relate to the original requirements created during P1.

- 1- Allows student to configure desired degree map/schedule in multiple ways (**Student Requirement 2**)
- 2- The student has the option to modify or fine tune the semesters to obtain the perfect schedule for each studying term. This can be done through toggling data fields while designing their degree map. (**Student Requirement 3**)
- 3- The software then displays an intuitive design of each semester through multiple representations: Charts for studying and downtime allocation. (**Student Requirement 4**)
- 4- Saving/Deleting the desired degree schedule/map. (**Student Requirement 5**)
- 5- If a user accidentally deletes a course, an undo feature will be available to revert to a precious configuration. (**Student Requirement 9**)
- 6- If a user deletes a pre or co-requisite to another course, a warning will be displayed to the user that the affected courses will not be available should the user continue the action. The option to revert the action will be present. (**Student Requirement 10**)

Upon tapping the Create Degree Map button on the Course Schedule Menu (**Figure 17**), the Degree Map process will begin. (**Figure 32**)

**Figure 32** contains a backwards return arrow to venture back towards the Course Schedule menu as well as an information button. (**Figure 33**) It is titled “Create Degree Map”. An introductory paragraph is available to explain how the degree map works. The first step is to name the new degree map and then to hit continue to move to step 2.

The image shows a mobile app interface for 'Create Degree Map'. At the top, there is a header bar with a hamburger menu icon on the left, the title 'Create Degree Map' in the center, and a back arrow and help icon on the right. Below the header, a large text block provides a welcome message and instructions. This is followed by a section titled 'Step 1: Name your degree map'. Under this section, there is a text input field with the placeholder text 'Name Your Degree Map' and a blue 'Continue' button below it.

Create Degree Map

Welcome to the Degree Map Creator! Let the generator visually display your fine-tuned future semesters! Based on your credits received, the degree map creator will generate a degree map for you to your specifications. Alternatively, let the generator build a basic schedule for your prerequisites, and then choose whatever courses peak your interest through our Future Courses Tool. You May also edit your degree map when the map is generated! If you delete any prerequisites to certain courses in your degree map, you will receive a message and courses requiring the deleted prereq will be marked red! To make sure every degree map is correct and ensures graduation, you will receive an error symbol on your degree map, along with information as to why it cannot guarantee graduation (Missing Prereq, Missing Core Course, Not enough Credits, etc....)

Step 1: Name your degree map

Name Your Degree Map

Continue

Figure 32: Degree Map Creator step 1

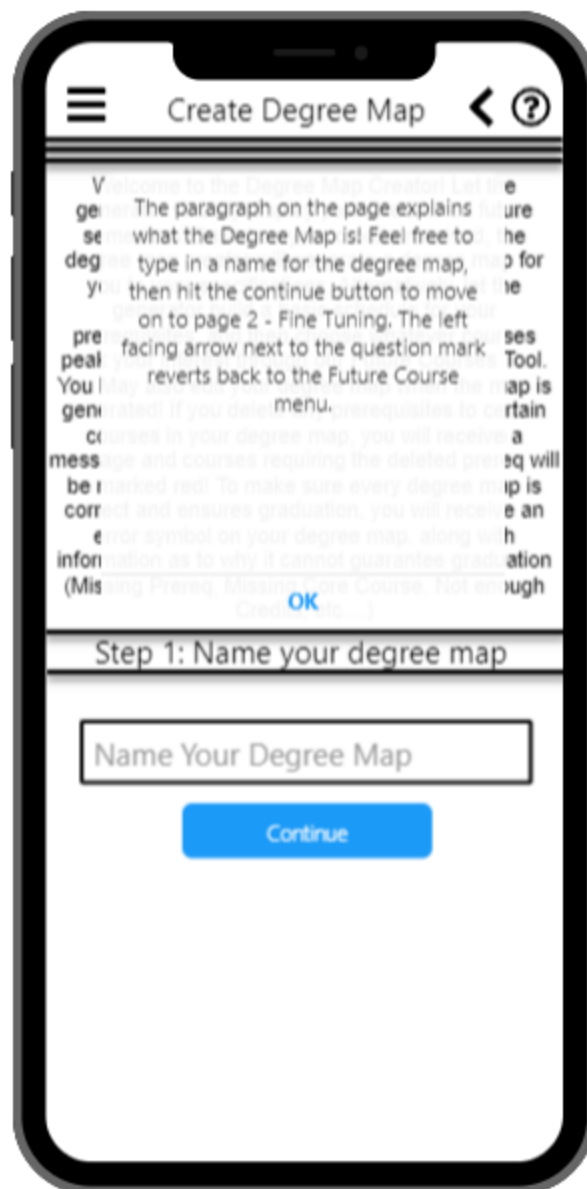


Figure 33: Degree Map Creator Help

After naming the degree map and hitting the continue button, users will proceed to step 2. (**Figure 34**)

At step two, users are encouraged to specify all requirements they would like to fulfill in their ideal degree. There is a back arrow in the top right corner to return to naming the degree map, if a sudden new name is thought off. As on every page, the navigation bars are present to allow easy navigation to different features. There is also a main Question Mark System for general info about Step 2 (**Figure 35**). Each Requirement Has a Question Mark System pop up (**Figure 36**) which explains what that specification is for and how it filters the Uvic Database to create the optimal degree map. **ALL DATA FIELDS MUST BE COMPLETED BEFORE GENERATION.** Figure 34 references DMC requirements 1 and 2.



The image shows a mobile app prototype for "Create Degree Map". The screen is titled "Step 2: Enter Specifications". It contains two main sections for user input.

**Specification 1: Full or Pre - Requisite Map**

This section has a title in blue text and a help icon (a question mark in a circle). Below the title are two radio button options: "Full Map" and "Pre-Requisite Map".

**Specification 2: Degree?**

This section also has a title in blue text and a help icon. It contains a "Major:" label followed by three radio button options: "CHEM", "CSC", and "CIVE". Below these is a "Double Major? (Optional)" label, followed by two radio button options: "None" and "ASL".

Figure 34: step 2

☰ Create Degree Map < ?

### Step 2: Enter Specifications

Moving onto the detail of you very own degree map! The information entered here is vital. Based on the specifications you provide, your completed courses will be pulled in from your administrative transcripts database and the map will be generated based upon factors like credits received, credits remaining, prerequisites finished, preferred sessions of study, favourable electives, double majors, minor certificates and more! Combining all of this data will provide you with the most optimal personally suited degree map for YOU! If you'd like to rename your degree map, just hit the left facing arrow!

Specifications OK ?

Major:

CHEM

CSC

CIVE

Double Major? (Optional)

None

ASL

Figure 35: step 2 information

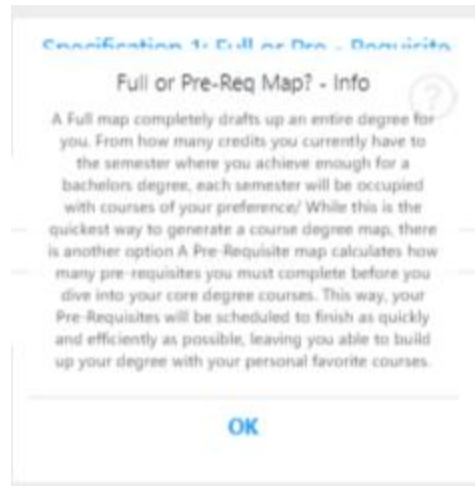


Figure 36: Information about specific data fields