

Project Proposal

Course Title: COSC 4P02

Course Instructor: Naser Ezzati-Jivan

Project Creation Date: January 8th, 2025

Team Name: The Mixers

Ashu Chauhan – 7001571

Avi Patel – 6741961

Fatima Abourida - 7119490

Jerome Uwaneme -7141270

Olaoluwa Akanji - 6908776

Oreoluwa Akanji - 6910483

Russell Salacup – 7177884

Introduction

■ **Importance of Topic** (Russell)

At the university level, students are responsible for meeting all course requirements for graduation. However, navigating the numerous web pages scattered across the university website can be daunting and inefficient. Consequently, students from various programs heavily rely on academic advisors for guidance each year, placing a significant burden on these advisors. This underscores the need for a better streamlined and accessible solution.

■ **What is the Problem?** (Russell)

Currently, the student portal **does not reflect** how courses previously taken or currently registered match up against the student's enrolled program. This results in tedious tab changing to compare courses and allows errors to occur, such as missing a course, or not accounting for schedule conflicts. While academic advisors can help with this, queue times may be long before a student can get their assistance, especially around the start of a new term.

In addition, **scheduling conflicts** – places in the schedule where multiple courses occur at the same time in different places – cannot be visualized clearly on the registration page or any course listing pages. Confirming a conflict currently requires registering for the courses in question then switching pages to the student schedule where the conflict appears, which can be inconvenient, or reading carefully into the term number, day of the week, and time slot of each course, which can cause unnecessary stress and may likewise be prone to errors.

■ **Our objective and goal** (Jerome)

We aim to develop an application that creates personalized academic schedules tailored to each student's goals, starting with a focus on computer science students. If time allows, we plan to expand to other programs. The primary objective of Course Mix is to allow students to make informed decisions about their academic journeys, reducing stress, uncertainty, and challenges. By serving as a personal, on-demand academic advisor, Course Mix will guide students every step of the way throughout their university experience.

■ **What is the overall requirement?** (Oreoluwa)

A modern application is needed to streamline academic planning and course selection by leveraging metrics such as program duration, preferred graduation date, and target CGPA. This would enable students to make smarter choices and stay focused on their academic objectives.

■ **Our solution** (Ashu)

Course Mix provides Brock University students with a comprehensive hub for academic planning. The app serves as a one-stop destination, providing users with a centralized platform to view courses, access planning details, and receive personalized suggestions. Features include insights into course difficulty, recommended course loads, and customized schedules. Course Mix functions as a 24/7 academic advisor, giving students greater control over their academic journey and helping them achieve better results aligned with their goals.

Project Description (Olaoluwa)

Vision Statement (Motto): Revolutionizing academic advising and empowering students through personalized, data-driven solutions with Course Mix.

Course Mix: A Personalized Academic Advisor App

Course Mix is an innovative application that allows students to achieve their academic goals and aspirations. By utilizing key metrics such as **program duration, preferred graduation date, and target CGPA**, the app generates a customized academic plan tailored to each student's unique preferences and requirements.

Key Features

- **Personalized Course Planning:** Course Mix creates an optimized course schedule from day one, equipping students to make well-informed academic decisions and plan their academic journey strategically.
- **Dynamic Course Adjustment:** The app adapts academic plans to evolving needs, whether students need to retake a course or take a gap year. This ensures they stay on track for their target graduation timeline.
- **Course Insights:** Users can access and explore comprehensive course data, including class schedules, failure rates, and peer reviews.
- **Community Feedback:** A built-in chat function and social page allow students to discuss and rate courses, helping peers discover more efficient course combinations for a streamlined and engaging university experience.

Our Goal and Vision:

Building on the Course of Action Dashboard App, we aim to revolutionize academic advising through a more interactive (and intuitive) interface and advanced features that will redefine university education and enhance student life.

Personal Testimony

As a first-year student, I struggled due to inadequate academic advising. Despite actively seeking assistance through persistent e-mails and attending infrequent in-person sessions, I received mostly generic responses like “refer to your course schedule or course planner,” which failed to address my specific questions about course selection. Additionally, I incorrectly assumed that I couldn’t enroll in second-year courses until completing all first-year requirements—a misconception that nearly delayed my graduation. This experience forced me into overwhelming course loads as I scrambled to catch up.

With Course Mix, I could have avoided this ordeal by effectively forecasting my courses and planning my schedule with ease, freeing valuable time for other academic pursuits. Most importantly, it would spare others the difficulties I experienced.

Evolution Plans

Future versions of Course Mix will introduce enhanced academic tools, such as:

- **Interactive Campus Guide:** A feature designed primarily for first-year students, offering effortless campus navigation.
- **Campus Map Integration:** A crucial feature inspired by my own experience. I once spent nearly an hour searching for South Block, missing a significant portion of my first in-person class. A friend had to leave her residence to guide me—an unnecessary inconvenience that Course Mix’s map functionality would have resolved. With this feature, no student will ever miss a class due to navigation issues.
- **Compatibility with other University Programs:** Our primary goal is to develop this app specifically for computer science students. If time permits, we plan to expand it to other university programs. This approach allows us to focus on a manageable scope initially, as incorporating multiple programs would require accounting for their unique academic calendars, leading to longer development times and scalability challenges.

With Course Mix, we aim to transform the academic advising experience, empowering students to achieve their academic goals with confidence, efficacy and ease.

Software Engineering Process (Avi)

We're going to be using the Scrum method for our project because it's a flexible and effective way to tackle complex tasks. The idea is to break the work into sprint cycles, where each sprint delivers a specific, functional part of the system. To effectively decide what to include in each sprint cycle, one sprint might focus on enabling students to select courses, while the next could add features like credit tracking or dynamic course adjustments, and the next sprint could be an integrated chat functionality that allows students to rate and discuss courses, helping to identify easier course combinations, and so on.

We will use Jira to manage user stories and tasks. User stories will represent key features like personalized course planning or feedback from a student's perspective. These will be broken down into smaller, manageable tasks and prioritized for each sprint. Jira will also help track progress and maintain alignment with project goals.

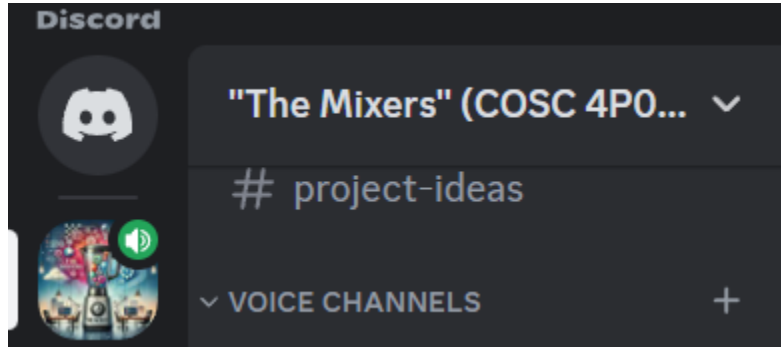
For version control, we'll use Git to manage the codebase and documentation. Each team member will create feature branches for their tasks, using pull requests to merge completed work into the main branch after peer review. This approach will ensure organized development, minimize conflicts, and maintain code quality. Git will also allow us to track changes, roll back if needed, and collaborate easily across the team.

We'll hold weekly Scrum meetings to share updates, address challenges, and refine functionalities. Scrum's iterative approach will allow us to revisit and enhance features continuously, ensuring a polished final product.

Team Members/Roles & GitHub

GitHub Repository: <https://github.com/Avipatel1107/COSC4P02>

Primary Method of Communication: Discord



Team Members	Roles
Ashu Chauhan	Developer
Avi Patel	Developer
Fatima Abourida	Scrum Master, Developer
Jerome Uwaneme	Developer
Olaoluwa Akanji	Product Owner, Developer
Oreoluwa Akanji	Developer
Russell Salacup	Developer, Lead Presenter

Timeline of Project (Fatima)

Timetable	
Date	Purpose
Fri, Jan 10, 17:45 - 18:30 <i>45 min</i>	Meeting: Finalize project idea, and split up tasks for the Proposal
Sat, Jan 11, 14:00 - 14:30 <i>30 min</i>	Meeting: Finalize the Proposal
Sun, Jan 12, 23:59	Due Date: Proposal
Tue, Jan 14, 9:00	Meeting: Discuss user stories, and split up tasks for the RPD
Fri, Jan 17, 18:30	Meeting: Finalize the RPD
Sun, Jan 19, 23:59	Due Date: Release Planning Document
Tue, Jan 21, 10:00 - 11:00	Tutorial: Tools for Software Engineering by Brendon Park
Tue, Jan 21, 11:00 - 12:00	Meeting: Finalize languages being used, create a breakdown of the development process (breakdown of front end, back end, the design, database, and so on)
Fri, Jan 24, 18:30	Meeting: Finalize the development break down, and split up tasks
Tue, Jan 28, 10:00 - 11:00	Tutorial: JUnit and Testing Frameworks by Madeline Janecek
Tue, Jan 28, 11:00 - 12:00	Meeting: Go over progress, Q&A
Fri, Jan 31, 18:30	Meeting: Go over progress, Q&A, assign tasks
Tue, Feb 4, 9:00	Meeting: Go over progress, Q&A
Fri, Feb 7, 18:30	Meeting: Go over progress, Q&A, assign tasks
Tue, Feb 11, 10:00 - 11:00	Tutorial: LLMs and Prompt Engineering for Software Engineers by Sarfarozi Yunusov
Tue, Feb 11, 11:00 - 12:00	Meeting: Go over progress, Q&A
Fri, Feb 14, 9:00	Meeting: Discuss progress, and split up tasks for PR1
Tue, Feb 18, 18:30	Meeting: Finalize PR1, Q&A, assign tasks
Sun, Feb 23, 23:59	Due Date: Progress Report 1
Tue, Feb 25, 9:00	Meeting: Go over progress, Q&A, assign tasks

Tue, Mar 4, 9:00	Meeting: Go over progress, Q&A, assign tasks
Tue, Mar 11, 9:00	Meeting: Go over progress, Q&A, assign tasks
Tue, Mar 18, 9:00	Meeting: Discuss progress, and split up tasks for PR2
Fri, Mar 21, 9:00	Meeting: Finalize PR2, Q&A, assign tasks
Sun, Mar 23, 11:59	Due Date: Progress Report 2
Tue, Mar 25, 9:00 - 12:00	Meeting: Film the YouTube video (in person)
Tue, Apr 1, 9:00 - 12:00	Meeting: Discuss progress, and split up tasks for FR
Fri, Apr 4, 18:30	Meeting: Finalize FR
Tue, Apr 8, 9:00 - 12:00	Meeting: Presentation Prep
Fri, Apr 11, 18:30	Meeting: Presentation Prep, Modify FR
Apr 14 - Apr 25	Due Date: Final Report, Demonstration and Presentation