UNIVERSITY OF WATERLOO

# Design Plan
# My Uwaterloo Classes

Helping students find classes that they *want* to take.

SYDE 461

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# 1. Introduction and Background

## 1.1. The Current System

The University of Waterloo is one of the largest post-secondary school education institutions in Canada at just over 22000 students. Each school term these 22000 students must chose and sign up for a variety of classes. Currently, the University of Waterloo provides a few resources to help students sign up for classes; they include the universities undergraduate calendar and the schedule of classes (Waterloo, University of Waterloo - Current Students, 2008).

The undergraduate calendar provides a short description of classes, usually 2-3 lines, as well as what term the course is offered in, what the pre-requisites are and the course ID number. These descriptions are sorted by department, for example all of the descriptions for architecture classes are seen on one page (Waterloo, Undergraduate Calendar 2008-2009, 2008).

The schedule of classes allows a user to search for the schedule of classes by selecting a term, for example fall 2008, a department and optionally a portion of the course ID. The output of the search is a table that indicates various details of the class, including enrollment cap, class name, the professor teaching the course and when the class is scheduled to take place (Waterloo, Schedule of Classes For Undergraduate Students, 2008).

## 1.2. Deficiencies in the Current System

The current system allows students to muddle through finding classes to enroll into but this is not good enough. The obvious flaw is that the description of classes is on an entirely separate web page than the schedule of the classes. Another apparent issue is that it is difficult to know the quality of a given class because all that is available is the 2-3 sentence course description. There are also some other deficiencies:

- No search functionality
- No way to generate a schedule
- Difficult to plan out future classes with reference to pre requisites.
- No linking with outside resources, such as ratemyprofessor.com

These deficiencies in the current system lead to a large amount of student frustration because of the difficulties in finding courses to take (STV302 Fall 2008, 2008). There are many instances of

individuals attempting to find a course to fit their interest but to no avail because of the lack of resources (Schulze, 2008). Furthermore students end up taking courses that they really do not have interest in because of the lack of details provided by the current system.

## 1.3. Problem Statement

Students at the University of Waterloo are subject to an undergraduate class system that is less than ideal; information is disjoint, there are no reviews for classes, there is no search feature, rendering it difficult to plan out a university career. A successful solution will allow a user to easily and quickly ascertain the quality of a class and enable them to plan their university careers such that a university student requires reduced effort in choosing courses.

# 2. Objectives and Methodology

## 2.1. Objectives

The over arching objective is to provide a service to students of the University of Waterloo that improves the class selection process. To achieve this over arching objective, the following lower level objectives are defined:

*Data Location*

The information located in the undergraduate calendar and the schedule of classes is accessible in a single location.

*Quality of Classes*

A user will be able to easily assess the quality of a given class. This will be ascertained based on a user test. Users will indicate whether they felt they were able to tell the quality of the class based on the displayed information; 50% or more users must indicate that they were able to gauge the quality of a class.

*Ease of Accessibility of Data*

All pertinent data must be easily accessible. This will be ascertained based on a user satisfaction study. Users will indicate whether they felt the data was easily accessible or not; 50% or more users must indicate that the data was easily accessible.

*Planning*

A user will be able to plan out their Systems Design undergraduate career.

*User Experience*

The new implementation will be more usable than the current system. This will be ascertained based on user experience testing. Based on a questionnaire following the use of both systems, eight out of ten users must prefer using the new implementation.

## 2.2. Methodology

The methodology for the solution must be such that it meets all of the objectives. Methodology for each individual section will be outlined below:

### *Data Location*

A web based application will be designed and implemented such that it provides the data from the undergraduate calendar and schedule of classes in one web page. The data will be populated in the web application by mining the information from both of the sites mentioned above.

### *Quality of Classes*

To ensure that the quality of a class is clear, a rating system will be implemented in the web application. A user will be able to give a yes or no type rating to the following criteria:

- Was it Difficult?
- Was it Interesting?
- Was there a Heavy Workload?
- Was the class worth taking?

Furthermore users will be able to upload content related to the class, such as a syllabus, and will be able to indicate further information, for example if the class has a final exam or not.

### *Ease of Accessibility of Data*

To ensure that data is easy to access, a search feature will be implemented. The search will contain filters that allow a user to sort the returned data based on these features.

### *Planning*

A schedule generation tool will be implemented such that a user can enter courses and they will be entered into a time table based on their anticipated times. Furthermore the scheduling tool will indicate if a selected course has a prerequisite that needs to be taken first.

### *User Experience*

To ensure that the new implementation results in a better user experience, user testing will be done at many stages (Krug, 2005). User testing will be performed at the completion of any major feature, for example the rate a class feature. The information gathered from the user tests will then be incorporated into the application. Furthermore, the web application, once live will have a feedback link so that users can easily submit feedback about the application. This feedback will then be incorporated into future iterations of the application.

# 3. Timeline – Gantt chart

The time lines for the 4A and 4B term can be seen below in Figure 1 and Figure 2 respectively.

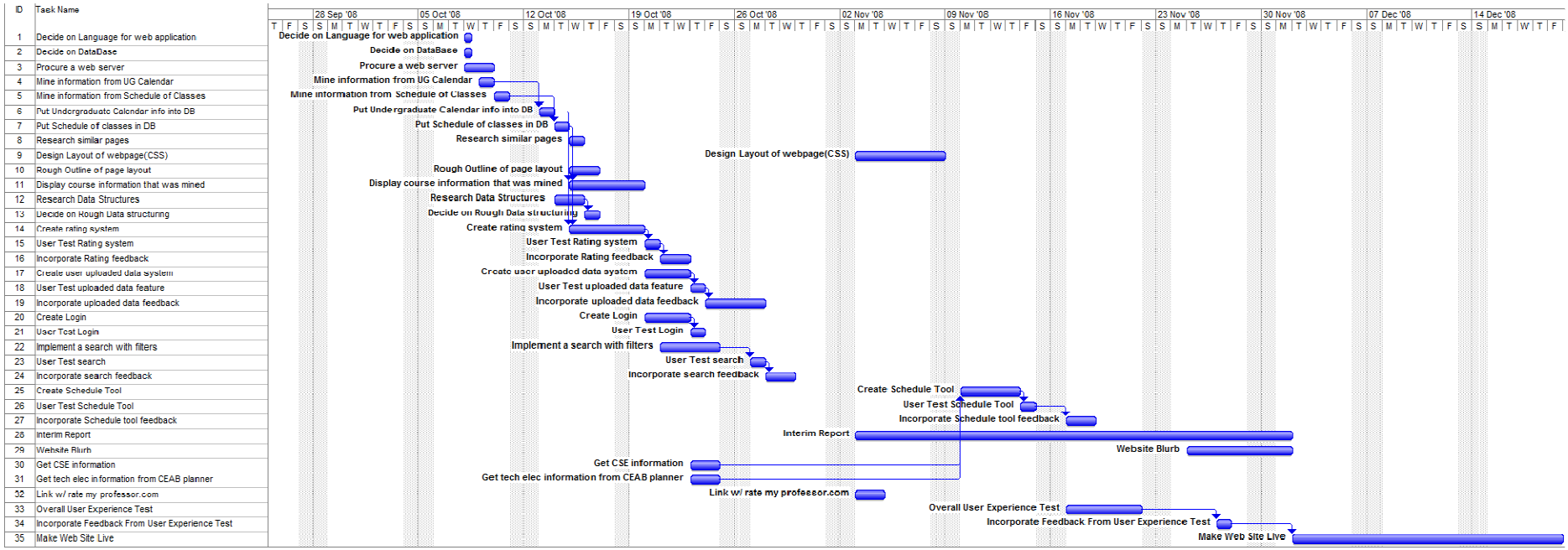


Figure 1: Timeline for 4A

| ID | Task Name |
|---|---|
| 1 | Create feedback submital tool |
| 2 | User test feedback tool |
| 3 | Incorporate User Feedback |
| 4 | Research how to measure efficiency |
| 5 | Test Efficiency of web page |
| 6 | Correct any efficiency issues |
| 7 | Individually research other features to add |
| 8 | Add any new features |
| 9 | User test added features |
| 10 | Incorporate feedback from user tests |
| 11 | User survey of new features to be included |
| 12 | Implement desired new features |
| 13 | User test added features |
| 14 | Incorporate results of user test |
| 15 | Final Report |
| 16 | Prepare for Symposium |
| 17 | Advertise Website |

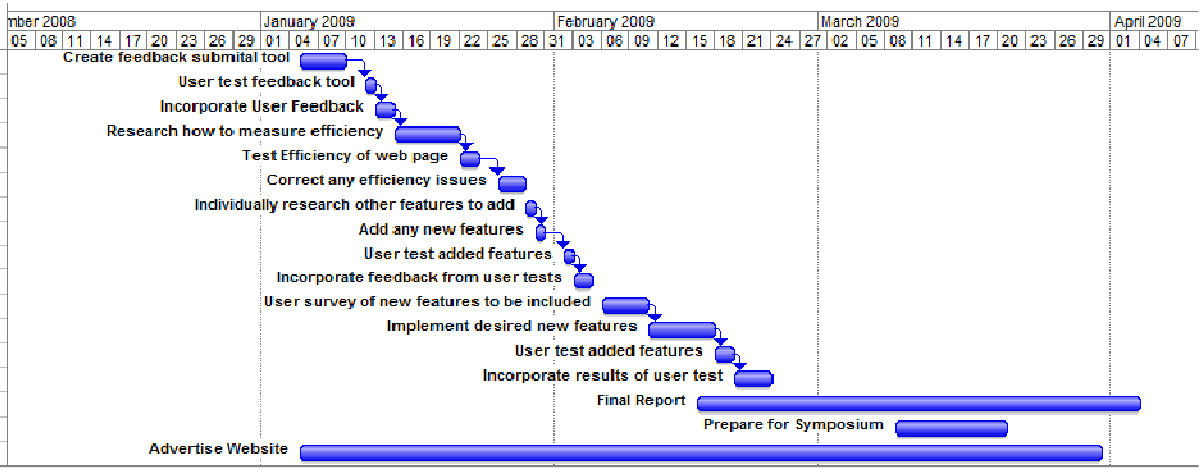


**Figure 2: 4B Timeline**

## *Identified Risks*

It is important to identify the risks associated with the tasks in the timeline; they are as follows:

- Mining information from the undergraduate calendar may be difficult as it is unknown if there is a certain pattern of how the tables are laid out.
- Selection of data structure is done improperly leading to large refactoring later in the design process.
- It will be more difficult than first thought to find volunteers for the user testing that had been laid out.
- A suitable server to host the live website is more difficult to find than anticipated.
- Traffic on the live website is too high and causes the application to crash. If this were to occur large amounts of investigation would be in order to ensure that the problem that caused the crash gets resolved.
- The advertising fails and there is not enough traffic on the website, therefore much of the user contributed content would not be useful because of the lack thereof.

# 4. Bibliography

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