

# SFU SIS ENROLLMENT SYSTEM FINAL PROJECT TEAM REPORT

IAT 201. D104. TEAM 402 - TEAM CHING CHONG

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NOVEMBER 29 . 2012



We hereby grant permission to show this report in future courses as sample project.

# ABSTRACT

SFU SIS  
ENROLLMENT  
SYSTEM  
FINAL PROJECT  
TEAM REPORT

## INTRODUCTION

Our report examines the SFU Student Information System in terms of users' goals and behaviors based on heuristic violations, as well as usability testing. We specifically focused on the enrollment process and also, its efficiency and effectiveness when user is completing a task of course enrollment. To measure these qualities, we produced two different digital prototypes for user testing. Furthermore, we applied quantitative and qualitative research method into our questionnaires and survey to collect data of our target users which involves SFU students who are in the range of first year to senior year.

## MOTIVATION

Our motivation is to improve SFU SIS into a more proficient interface as other university's enrollment system. During our examination and user testing, we found issues that would could lead to unpleasant user experience due to the lack of simplicity and the visual representation of information does not have hierarchy for interactive elements. As students who had gone through many enrollment sessions, we are aware of issues of the current interface and the importance of course enrollment time for students, which motivates us to create a better interface for better user experience.

## BRIEF DESCRIPTION OF EVALUATION OUTCOMES

Our redesigned interfaces has more efficient task processes based on the quantitative data from user testing. Participants' insights are that one of our interface has better aesthetics but the other prototype has better functionality. We were able to reduce a significant amount of time spent on course search with our redesigns. In comparison to the current SIS, our prototypes took less time to enrol in a course.

## CONCLUSION

After user testing and design evaluation, our hypothesis in creating consistency by following SFU main website layout, making hidden functions visible and creating unique course search options, now offers users with greater flexibility to manipulate their course schedule which leads to efficiency and effectiveness upon completing their tasks.

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# **CHAPTER 1**

## **IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS**

**ID 1 REPORT**

TEAM LEADER . JANICE NG

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 1. INTRODUCTION TO THE PROJECT AND PROJECT TOPIC

#### SFU SIS Enrollment System

Link: [https://go.sfu.ca/psp/goprds/SFU\\_SITE/ENTP/h/?tab=GUEST](https://go.sfu.ca/psp/goprds/SFU_SITE/ENTP/h/?tab=GUEST)

The Simon Fraser University Student Information System (SFU SIS) manages students' enrollment information, such as course enrollment, grades, transcripts and personal information. Due to many components that are composed in this system, the team has decided to particularly focus on the course enrollment section which includes adding, dropping, swapping and editing courses, as well as viewing the timetable. With the redesigns proposed, it will help decrease the amount of constraints and offer a more simple task for students to achieve course selection in an efficient manner to prevent delays and frustrations. The reason is that the current procedure requires too many steps, and that there are unnecessary error messages even though the user is conducting the correct task and when the user actually performs the wrong task, the error message does not help the student solve the issue. Therefore, the redesign can enhance the enrollment process.

Word count: 146 of [75 - 150 words allowed]



#### CLASS SEARCH

Select an institution, term and search method. Click GO to continue.

Institution	<input type="text" value="Simon Fraser University"/>
Term	<input type="text"/>
<input checked="" type="radio"/> Search for Classes <input type="radio"/> Browse Catalog	
<input type="button" value="Go"/>	

Figure 1: SFU SIS enrollment system

## Browse Catalog

Simon Fraser University | 2012 Fall

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
0	1	2	3	4	5	6	7	8	9																

Select show All Courses if you want to show all courses whether or not class sections are offered for the term. Select show Courses With Sections Offered to show only those courses that have class sections offered for the term.

Show  All Courses  Courses With Sections Offered

[COLLAPSE ALL](#) [EXPAND ALL](#)

[CHANGE TERM](#)

- ▶ [ACMA - ACMA Actuarial Mathematics](#)
- ▶ [ALS - ALS Applied Legal Studies](#)

Figure 2: SFU SIS enrollment system

Simon Fraser University | 2013 Spring

[Open](#) [Closed](#) [Wait List](#)

[CLOSE](#) [START A NEW SEARCH](#)

▼ IAT 334 - Interface Design

First [1-5 of 5](#) Last

Section <a href="#">D100-LEC(11999)</a>	Status	<a href="#">select class</a>	
Session Regular			
Days & Times	Location	Instructor	Meeting Dates
Tu 10:30 - 12:20	Campus: SURREY Room: SUR5240	Allen Bevans	2013/1/7 - 2013/4/12

Figure 3: SFU SIS enrollment system

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 2. MOTIVATION AND PURPOSE

#### 2.1 Problem Statement and User Goals

During the process of course enrollment using the SFU Student Information System, the design team discovered many potential areas for UI and UX improvements. Based loosely on the concepts from pareto analysis, the project scope focuses on the course enrollment system as it poses the most significant amount of problems that affects the student body during registration. We found that the SFU SIS was unable to provide an efficient, fast, and intuitive interface for users to register their course with minimal errors. In retrospect, users were primarily concerned with being able to register their intended courses in a timely manner.

- Preliminary studies suggest that new users and veteran users alike find it difficult to navigate around the enrollment system as they have difficulty in finding the required links to achieve what they want.
- Users were having difficulties in visualizing and optimizing their weekly schedule every term during subject planning.

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#### 2.2 Goals and Objectives of the Interface Redesign

1. Allow users to perform subject registration with the minimum amount of time required.
2. Allow for minimum time required by users to make a decision on what subject and which section to register for.
3. Allow for easy changes to be made on any selection (i.e. paging back and forth etc.).
4. Reduce the amount of cognitive load and memorization required by the users when using the SFU Student Information System.

Word count: 70 of [70 - 100 words allowed]

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 3. USERS

#### 3.1 Description of User Base

The target users for the SFU SIS enrollment system are Simon Fraser University undergraduate and graduate students. The students will have a tendency to want to reserve their seat in classes that they need with the least amount of time as possible. It will also be a highly valuable asset for students to preview their schedule prior to confirming all their courses to prevent conflicting course and exam schedules. Hence, with users' needs in mind, we aim to develop a registration process that involves clear visibility, affordance, feedback and mapping for them to successfully enroll and manipulate their courses.

Word count: 99 of [50 - 100 words allowed]

#### 3.2 Persona

##### **Matthew Chang**

"I want to be able to choose all my second year core courses to have a successful start of a new school year."

##### **Demographics:**

Age: 20

Race: Canadian born Chinese

Location: Vancouver, BC

Family: Only child; father is a manager at HSBC; mother works at a shoe shop

Occupation: Student (2nd year at SFU in Business)

Hobbies: Reading novels; watching videos on Youtube; playing online games



Figure 4: Persona

##### **Technologies:**

Cell Phone: Samsung Galaxy S III (uses it 15 hrs/week to text his friends)

Laptop: Asus (uses it 40 hrs/week to surf the web and to do his homework)

Web Browser: Google Chrome

##### **Goals:**

Interface = To enroll in all his Fall 2012 Business courses

Life = To own his own software company after graduation

Word count: 139 of [100 - 200 words allowed]

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 4. CONTEXT OF USE, SCENARIO, AND TASK

#### Context of Use

It is extremely competitive for students at the start of every term to be enrolled in their first choice of courses. This is especially true for students who are in the school of Business as the student pool can be a lot larger than most other faculties. This is an ordeal to our persona, Matthew, who has to deal with at the start of every term. Coupled with the overwhelming number of lectures and tutorial sections, it can be a daunting task for him to strategize on what courses to take every term in the event that they were unable to get into their first choice of classes.

#### Scenario

With the minimal number of class offerings during the Summer term, Matthew has anticipated that he would be unable to get into his choice selections. However, he was shocked as he only managed to register one course out of all his 4 other courses which he has decided earlier. He now has to re-strategize on the type of course he now needs to take, and the subsequent tutorial section for each course.

#### Task

Matthew's primary task are as follows:

1. Re-strategize and pick 3 other courses that best fulfill his bachelor degree requirements.
2. Pick 3 other courses which his friends might possibly be enrolled in.
3. Plan 3 other courses that do not coincide with the 1 course which he has registered.
4. Plan all 3 other course that do not have schedule conflicts as well as exam schedule conflicts.
5. Optimize his weekly schedule to minimize time wastages.

Word count: 257 of [150 - 300 words allowed]

# CHAPTER 1

## 5. Heuristic Evaluation

Heuristic Violated	Severity Rating	Location & Description/Issues	Recommendation
Visibility	Low	Class numbers	Have clear indication next to the course title
	Medium	Dropping a course	Alert user
	High	The add class button has a small typeface	Turn it into a button rather than a link for higher hierarchy
	High	Everything is hidden on the top left corner with drop down-menus	Show the important informations and that the typeface should be larger for students to see the components
	Low	Name and student number is difficult to see Loading icon is hidden on the top right corner	Increase font size and place it in the site header
	Medium	Loading icon is hidden on the top right corner	If something takes longer to load, show it in the middle or bottom
Feedback	High	No Timetable preview to show time conflict (need to reduce cognitive load)	Offer a preview at the bottom or right during the entire enrolling process
	High	Does not show exam time conflicts	By having a preview of the schedule, have a drop down menu to direct to the exam schedule
	Medium	System does not update according to actions of users	Alert user if required
	High	Error messages are not specific and does not inform the user how to fix them	Tell user what to do and if it is unnecessary error, then eliminate it
Constraints	Medium	Need to click on "Proceed to Step 3" to confirm courses in order to hold your seat	Once a student selects a course, it automatically holds their seat
	Medium	Only 1 task can be done on 1 page	Provide pop-up menus if a student wants to do something else at the same time
Consistency	Medium	Redundant information of "Add Class" and "Search for Classes" functions	Integrate a "Select Course" function in the "Search for Classes" section during enrollment time
	Medium	No back function, need to use "Return to Result" or "Previous" button integrated in the system	Make the system capable of using the browser back function and eliminate unnecessary buttons
	Medium	The add, swap, drop and edit are all separated in different tabs with the interface all being slightly different	Allow the user to do everything on a single page with a large weekly schedule displayed
Affordances	High	Need to click on "Add Class" instead of "Search for Classes" to enroll	Integrate a "Select Course" function in the "Search for Classes" section during enrollment time
	Medium	Swap class does not mean you can change a lab or tutorial, but swap 2 different courses	Allow the user to do everything on a single page with a large weekly schedule displayed
Mapping	High	The large green button with text written on it provides a hierarchy to map to course selections, but an error-tolerance occurs when students accidentally click on it during enrollment times to add classes	Integrate a "Select Course" function in the "Search for Classes" section during enrollment time
	Medium	Cannot use the back button in the browser, but need to use buttons integrated inside the system	Make the system capable of using the browser back function and eliminate unnecessary buttons
Simplicity/Elegance	Medium	Too many redundant tasks to accomplish and that they are separated across individual pages	Allow the user to do everything on a single page with a large weekly schedule displayed

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 6. USER STUDY

#### 6.1 Goals of the User Study & Questions/Hypotheses Addressed

To understand issues of the system, user study sessions were conducted where participants were selected with the random sampling approach. Then they try to enroll in a course using the current system while being timed. With this study, it will help us confirm issues proposed based on our hypotheses:

1. The website provides many tools to create a term schedule, but they are spread out across different tabs, which would lengthen the time user will need to spend on course registration.
2. The course information that are mostly represented in text is difficult for user in terms of visualizing their potential schedule.

After testing, questions below will be asked for feedback about the current system. We are specifically examining the user's experience in terms of important course data and heuristics of UI.

#### Questions:

1. What is your major? In what year? How much credits do you currently have? Do you currently hold scholarship?
2. What aspects of the system did you like? Please list few and why.
3. What aspects of the system did you not like? Please list few and why.
4. Did you experience any confusion with any of the functions?
5. Is the interface easy to use? Please rate from 1-10.
6. Do you plan your course schedule ahead of time? (Yes or No)
7. When your enrollment appointment time starts do you use "Search For Classes" button or "Add a class" button?
8. How long do you spend from adding courses to confirming courses for the semester schedule?

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# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 6. USER STUDY

#### 6.2 Methods

##### 6.2.1 Participants

###### **Participant 1**

Age: 20

Gender: male

Type of User: experienced user

Occupation: student

Educational Background: Bachelor's Degree in SIAT

Scholarship: no

Number of Credits: 50

Year: 3rd

Expectation from Student Information System:

As a student who just started his senior year, he is expected to compete with older senior students for the upper level courses.

Importance of Participant 1:

This particular user has been selected because he does not hold scholarship and that he recently became a senior student where the team wants to know if this student enjoys the current system.

###### **Participant 2**

Age: 19

Gender: female

Type of User: experienced user

Occupation: student

Educational Background: undecided major

Scholarship: no

Number of Credits: unknown

Year: 2nd

Expectation from Student Information System:

For this student, she will be hoping to get a head start on her second year elective courses since she currently has a dilemma of simply graduating as an Arts student or becoming a Business student, where she will not be behind with her electives later.

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 6. USER STUDY

#### 6.2 Methods

##### 6.2.1 Participants

###### **Participant 2** (continued)

Importance of Participant 2:

The reason why we chose this subject is because she is in the same school year when she is compared to our persona.

###### **Participant 3**

Age: 20

Gender: male

Type of User: experienced user

Occupation: student

Educational Background: Bachelor's Degree in SIAT

Scholarship: no

Number of Credits: unknown

Year: 3rd

Expectation from Student Information System:

Another participant who does not hold scholarship is hoping to get into courses that he wants because he is currently behind with many second year courses that have not been taken yet.

Importance of Participant 3:

Since this student seems to be unsure and unknown about his degree process, we were interested to see how he responds to our task, given to enroll in BUS 201 using the current SIS enrollment system.

###### **Participant 4**

Age: 23

Gender: female

Type of User: experienced user

Occupation: student

Educational Background: Bachelor's Degree in Business

Scholarship: no

Number of Credits: 120

Year: 5th

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 6. USER STUDY

#### 6.2 Methods

##### 6.2.1 Participants

###### **Participant 4** (continued)

Expectation from Student Information System:

As a student who is in her last year of university, she would want to pick the final classes that she is interested in, as well as her core courses in order to successfully complete her degree.

Importance of Participant 4:

For this student, she has been chosen because her major reflects to our persona, as a Business student. With this subject, the team will like to know how a Business student strategize and use the SFU Student Information System.

###### **Participant 5**

Age: 22

Gender: female

Type of User: experienced user

Occupation: student

Educational Background: Bachelor's Degree in SIAT/Communications

Scholarship: no

Number of Credits: unknown

Year: 5th

Expectation from Student Information System:

This student is also in her senior year, but she is aiming to receive two degrees where getting her courses are important to not fall behind.

Importance of Participant 5:

By choosing this individual, the team will assume that this person will be able to make quick decisions and for the team to view how the user takes shortcuts in order to enroll in classes of two different faculties.

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 6. USER STUDY

#### 6.2 Methods

##### 6.2.2 Materials and Procedure – Data Collection Tools and Procedure

###### Data Collection Tools

###### Heuristic and Usability Evaluation

SFU Student Information System was evaluated with a heuristic evaluation. We studied visibility, feedback, constraints, consistency, affordances, mapping and simplicity/elegance of the system to find pros and cons to improve on. We found out that there were many redundant contents and text heavy contents throughout the enrollment process.

###### Usability Testing

Using a digital prototype of the original website, we asked the participants to enroll in BUS 201 which is a type of course that our persona would take. During the process, we asked them to speak out loud for recording their experience. As the students were executing the enrollment process, the team observed closely to their movements and speech in order to understand error-tolerances that triggers users in the current system, as well as the different routes they chose to enroll in courses, such as many shortcuts embedded in the system. In addition, they were timed to represent the amount of steps required to proceed in the course registration process since it constraints users one task per page, which became annoying for some users, others became confused and some actually read through error messages that are not important because they do not cause harm to scheduling.

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 6. USER STUDY

#### 6.2 Methods

##### 6.2.2 Materials and Procedure – Data Collection Tools and Procedure

###### Data Collection Tools (continued)

###### User Questionnaires

After usability testing, we asked the participants to answer 8 questions. First few questions were focused on user's major, year they are in, number of credits, and scholarship standing to determine their academic status. These factors are asked in the questionnaires since it affects the enrollment appointment which leads to the experience of each participant during their actual time for course registration. Then, the next few questions asked about the user's experience with the system. Last two questions are about which buttons are used and how much time is spent for planning a semester schedule in order to study each participants habits.

###### Procedure

1. Setup: A laptop with current SFU SIS interface. Additional laptop for audio recording with usb mic connected. Stopwatch.
2. Instruction: Facilitator let the user know what they are going to do
3. Consent Form: Facilitator asks the user to sign the permission form
4. Audio Recording/Mic: Before the session begins, Facilitator asks for permission to record user and tell her/him to speak their thoughts out loud.
5. Laptop: Using the SIS SFU interface, user is asked to enroll in BUS 201 class in the Fall 2012 term, section D100.
6. Stopwatch: Facilitator measures the time that user takes to complete the task.
7. 2 of the team members takes note of user's behavior on a paper.

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 6. USER STUDY

#### 6.3 Results

##### Participant 1

1. SIAT 3rd year 50 credits, nope
2. The top menu tabs really simple its a quick menu
3. proceed to enroll is bad
4. enrolling , view classes is different from weekly schedule
5. 4
6. Yes
7. search classes
8. i don't use any codes

Time completion: 1 minute and 35 seconds

##### Participant 2

1. Year 2, don't know my major yet, I don't know how many credits I've taken before.  
Scholarship after graduating high school
2. easy to find class
3. N/A ?
4. No
5. Yes, 8
6. Yes, every semester :D -- but they do not always work out because of classes being full
7. I use add a class, but if I do not know what to take I go to search for classes and enroll from there
8. hours? depends on how the time schedule works for all my classes.

Time completion: 1 minute and 8 seconds

##### Participant 3

1. 3rd year in SIAT don't know anything else
2. Nothing I like
3. I didn't like the troll button
4. Not really, only the troll button
5. 7
6. Yes, because every course in SIAT is always full, most of the time
7. I don't really remember
8. I'm not sure maybe a few hours?

Time completion: 1 minute and 45

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 6. USER STUDY

#### 6.3 Results

##### Participant 4

1. In 5th year, in Business, i have 120 credits, no scholarship
2. I liked that the courses are separated by faculty. Since I knew which type of class I wanted, it was easy to find the general section. If I know which class exactly I want to take, the system is very easy to use and easy to find my courses.
3. if I am simply browsing to see which courses are interesting, the system can be frustrating because you can't simply use the "back" button, you have to click their "return to results" button, otherwise you get a page error. As a user who likes to use keyboard shortcuts a lot, this is frustrating because it becomes a reflex to simply hit "back/delete" to back to the previous page.
4. No, I did not experience confusion.
5. For a first time user, the system may not be as simple, but since I have used the system before, I find it easy to navigate. 7/10
6. Yes
7. Add a class
8. 2~5 minutes.

Time completion: 55 seconds

##### Participant 5

1. SIAT-Communications, 5th year
2. I don't like the system that much, I am only familiar the way it works.
3. I don't like the amount of clicking I have to do, to proceed to enroll, nor do I like that I had to search instead of browsing.
4. Browsing was missing from the prototype.
5. Not that I think.
6. Yes. I browse course times.
7. 6-7
8. 1-2 hours.

Time completion: 1 minute and 45

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 6. USER STUDY

#### 6.3 Results

##### Summary

We analyzed second year to fifth year SFU students, who have decent experience with the SIS interface. In average, users took 1 minute and 25 seconds to complete the task of enrolling in the Business 201 course. Many of the participants stated that the system is relatively easy to navigate since they knew about the limitations of the interface, such as no back function and location of the buttons. However, there were some concerns about the interface. Participant 4 expressed frustration with unavailability of back function and concern for possible difficulty with the interface for the first time users. Participant 5 mentioned that there were too many clicking involved in the process of enrollment. Except for participant 4, the rest of the users stated that they spend around an hour or more to plan out their term schedule. This confirms one of our hypothesis that text heavy representation of course information is hard to visualize and takes times to organize.

#### 6.4 Discussion & Conclusion - Implications for Your Project

The first hypotheses allows us to confirm that the website has effective tools, but users found some features were lacking and making it difficult to complete their task. Majority of the users discovered the menu to be simple and easy to find classes. Also, they thought the system was easy to navigate. However, some features that users were not satisfied with are certain functionalities. There was concern for not having a proper back button to reverse the process. Due to the number of steps needed to enroll in a course, many of the participants thought that too much time is spent on proceeding to enrollment stage.

For the second hypotheses about the difficulty of visualizing their schedule, users proved it to be not much of a problem. However, the majority of the participants stated that they spend more than an hour on the process of adding courses to confirming them for the semester schedule. Furthermore, they stated that they prepare in advance for course registration. Considering the effort they put in beforehand, they invest quite a bit of time on registration.

Overall, our team was able to confirm most of our hypotheses based on the user study. To address these identified problems, we decided to focus on reducing the redundant information and to add functionality to assist the users' need to navigate back and forth on the steps they took during the enrollment process in order to increase the efficiency and effectiveness of the website.

Word count: 245 of [150 - 250 words allowed]

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 7. REQUIREMENTS STATEMENT

#### 7.1 Functional Requirements

Functional Requirements		Justification	Metric
Reduce in Navigation time	High	<ul style="list-style-type: none"><li>Users using the system often have extreme time constraints especially during their allocated course enrollment date/time</li><li>Reduce the time needed to achieve the intent of the users (i.e. subject registration, checking of weekly schedule, checking of exam schedule)</li></ul>	<ul style="list-style-type: none"><li>Minimize the number of times users click without mistakes while navigating to their intended location</li><li>Reduce number of clicks (by at least 25%) required by the users to navigate from the main menu to the subject enrollment page</li></ul>
Visualize Course Schedule	Medium	<ul style="list-style-type: none"><li>Users spend huge amount of time in manually planning their course schedule</li><li>There is a need to improve the information representation on the current interface (i.e. eligibility to register for course, availability of course, positions in the waitlist).</li></ul>	<ul style="list-style-type: none"><li>Improve feedback to users through the use of visual tools (i.e. visual cues on a calendar) so that conflicts between subject schedule can be easily noticeable and be changed accordingly</li><li>Survey to measure the effectiveness on these visual cues from a scale of 1-5 against current interface</li></ul>
Course Strategizing	Low	<ul style="list-style-type: none"><li>To enable users to optimize their schedule to reduce extended waiting times in between lessons.</li><li>Ability to pre-plan multiple versions of term schedule to be used in the event that the users were unable to enroll in their first choice of courses.</li></ul>	<ul style="list-style-type: none"><li>Measures the time current users takes to make a decision on subject registration</li><li>Minimize the time users spent to make decisions on subject registration by 25% (i.e. lab section, lecture section, which subject to register)</li></ul>

Word count: 234 of [150 - 250 words allowed]

# CHAPTER 1

## IDENTIFYING NEEDS AND ESTABLISHING REQUIREMENTS

### 7. REQUIREMENTS STATEMENT

#### 7.2 Non-Functional Requirements

Non-Functional Requirements		Justification	Metric
Improving intuitiveness for users	High	<ul style="list-style-type: none"><li>Too much unnecessary “noise” present in the current add/drop subject registration interface</li><li>Improve the intuitiveness of the current interface so that first time users can navigate to their intended page with minimal mistakes</li></ul>	<ul style="list-style-type: none"><li>Measures how many times users have to request for help while completing a set of tasks</li></ul>
Reduce cognitive load	Medium	<ul style="list-style-type: none"><li>Many tasks like the checking of time conflicts between courses are being done manually and consumes too much of the user’s resources</li><li>Improve the visualization of the current subject schedules(i.e. visual timetable schedule) to reduce cognitive load on users</li></ul>	<ul style="list-style-type: none"><li>Survey to measure the effectiveness on these visual cues from a scale of 1-5 against current interface</li><li>Qualitative surveys that asks the users what they like about the new interface</li></ul>
General	Low	<ul style="list-style-type: none"><li>Allow expansion and changes to be made outside of the scope of the subject registration system</li></ul>	<ul style="list-style-type: none"><li>Provides a unified look so that the current change can integrate well with the rest of the SFU SIS system</li><li>Use of color schemes, typeface, design styles have been kept consistent with the current interface</li></ul>

Word count: 180 of [150 - 250 words allowed]



# CHAPTER 2

## DESIGN

**ID 2 REPORT**

TEAM LEADER . SOOJIN (DIANA) LEE

# CHAPTER 2

## DESIGN

### 1. PRIORITIZATION WORKSHEET

Ranking	Item	Description	Business Importance	User Importance	Technical Feasibility	Resource Feasibility
1	Timetable	Add a visual display of course preview timetable rather than shopping cart list  Interactive schedule that allows course edits	Medium	High	High	Medium
2	Course Strategizing	Plan term schedule before or during enrollment time  A filter option for WQB requirements	Medium	High	High	Medium
3	Class Search	Combine “Add Class” and “Search for Classes” functions to eliminate redundant steps  Use alphabetical list of “Browse Catalog” for easy search  Use filters for quick class search without the need of course codes	High	High	Medium	Low
4	Class Manipulation	Have 1 confirmation button/page at the end instead of 3  Redundancy reduced by taking out at multiple pages of confirmation  “Add”, “Drop”, “Swap” are combined on one page for conveniency	High	High	Medium	Low

# CHAPTER 2

## DESIGN

### 1. PRIORITIZATION WORKSHEET

(continued)

Ranking	Item	Description	Business Importance	User Importance	Technical Feasibility	Resource Feasibility
5	Show Menu	Current hidden drop-down menus should be visible for easy access	Medium	High	High	High
6	Visual Organization	Need clear hierarchy for easy navigation Increase font size for better visibility	High	High	Medium	Medium
7	Tabs	Change design and functionality of the current tabs	Medium	Medium	Medium	High
8	Back Button	Make system compatible using web browser back button to go back to previous page instead of using constraint buttons ("return")	Medium	Medium	Low	Low
9	Consistent Layout	Integrate SFU web layout to provide a consistent aesthetic	Medium	Low	Medium	Medium

# CHAPTER 2

## DESIGN

### 2. DESIGN INSPIRATIONS, PRIOR WORK & COMPARISON TO OTHER EXISTING INTERFACES

#### UBC Enrollment System

Link: <https://ssc.adm.ubc.ca/sscportal/servlets/SRVSSCFramework>

The screenshot shows the UBC Enrollment System interface. At the top, there's a navigation bar with the UBC logo and "THE UNIVERSITY OF BRITISH COLUMBIA". Below it is a sidebar with links like "Welcome", "Sessions" (with "2012 Winter" and "2012 Summer" selected), "Campuses" (with "UBC Vancouver" and "UBC Okanagan" listed), "Explore" (with "Courses", "Standard Timetables" selected, "Specializations", "Course Search", and "Instructor Search"), "Tools" (with "MyProgram", "Registered Courses", "Add/Drop Courses", "MyTimetable", "MyBooklist", "MyWorklists", "Worklist 1" selected, "SSC", "Help" (with "Quick Help", "Glossary", "Course Planning - Vancouver", "Course Planning - Okanagan", and "Credit/D/Fail"), and "Logout"). The main content area has a header "Name: Janice Ng Student No.: 41934100" with a "Close Window" button. A message says "You have not selected an eligibility for this session. Please select one by clicking 'MyProgram'." Below this is a section titled "2012 Winter > UBC Vancouver" with a sub-section "Standard Timetables". It explains what standard timetables are and provides a list of them. A table lists degree codes and their subjects:

Code	Subject
BA	blank for cross edit
BASC	Bachelor of Arts
BCOM	Bachelor of Commerce
BDSC	B.D.Sc.(Dental Hygiene)
BEDE	Bachelor of Educ (Elementary)
BEDM	Bachelor of Educ (Middle)
BEDS	Bachelor of Educ (Sec)
BMLS	Bachelor of Medical Lab Scie
BSC	Bachelor of Science
BSCP	Bachelor of Science(Pharmacy)
BSN	Bachelor of Science in Nursing
DMD	Doctor of Dental Medicine
JD	Juris Doctor
MARCH	Master of Architecture
MBA	Master of Business Admin.
MD	Doctor of Medicine
MM	Master of Management
MPT	Master of Physical Therapy

Figure 5: UBC enrollment system

# CHAPTER 2

## DESIGN

### 2. DESIGN INSPIRATIONS, PRIOR WORK & COMPARISON TO OTHER EXISTING INTERFACES

The screenshot shows the UBC enrollment system interface. At the top, there's a blue header bar with the UBC logo and "THE UNIVERSITY OF BRITISH COLUMBIA". Below it is a yellow navigation bar with links like "Welcome", "Sessions", "Campuses", "Tools", and "Help". The main content area has a white background. On the left, there's a sidebar with links for "Sessions" (2012 Winter, 2012 Summer), "Campuses" (UBC Vancouver, UBC Okanagan), "Explore" (Courses, Standard Timetables, Specializations, Course Search, Instructor Search), "Tools" (MyProgram, Registered Courses, Add/Drop Courses, MyTimetable, MyBooklist, MyWorklists, Worklist 1, SSC), and "Help" (Quick Help, Glossary, Course Planning - Vancouver, Course Planning - Okanagan, Credit/D/Fail). The main area displays a table of courses under "Standard Timetables for Program BASC, year level:1". The table has columns for "STT", "Status", and "STT Description". Most entries are "Full" with descriptions like "HS01 - First Year Engineering (High School Group)". To the right of the table is a "Timetable Preview - Standard Timetable" section showing a grid for "Term 1" and "Term 2" from 700 to 1800 hours, with days of the week (Mon, Tue, Wed, Thu, Fri) listed at the top.

STT	Status	STT Description
	Full	<a href="#">HS01 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS02 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS03 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS04 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS05 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS06 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS07 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS08 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS09 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS10 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS11 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS12 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS13 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS14 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS15 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS16 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS17 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS18 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS19 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS20 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS21 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS22 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS23 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS26 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS27 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS28 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS29 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS30 - First Year Engineering (High School Group)</a>
	Full	<a href="#">HS31 - First Year Engineering (High School Group)</a>

Figure 6: UBC enrollment system

One of the inspirations comes from UBC's enrollment system, seen above which has a preview calendar to help students strategize on course selection. As shown in Figure 6, when a user hovers their cursor over a course, a preview schedule will appear automatically to show students a visual outline of their course timetable. Furthermore, to distinguish class conflicts, the system makes use of the bright color red to signify that two courses overlap, whereas when a student needs to be waitlisted, there is the color grey used. By understanding this enrollment system, the team believes that course preview is a useful asset to SFU students. With the incorporation of a preview function prior to confirming course registration, it reduces the cognitive load for users in managing their timetable. This is highly visual to prevent course conflicts without the need of organization by writing them down on a piece of paper or use external mediums. Therefore, it provides good feedback for users to understand their schedule since students can see course conflicts and make quick decisions to solve the issue.

# CHAPTER 2

## DESIGN

### 2. DESIGN INSPIRATIONS, PRIOR WORK & COMPARISON TO OTHER EXISTING INTERFACES

#### Nanyang Technological University

Link: <http://www.ntu.edu.sg/STUDENTS/UNDERGRADUATE/ACADEMICSERVICES/COURSEREGISTRATION/Pages/StarsPlannerUserGuide.aspx>

The screenshot shows the NTU STARS Planner interface for the Academic Year 2007, Semester 1. At the top, there is a logo for Nanyang Technological University and the title "STARS Planner Academic Year 2007, Semester 1". Below this, a red header bar displays "Office of Academic Services.....TEST ACCOUNT, ACC2 GA". The main area has two columns: "Course Codes" on the left and "Option" on the right. The "Course Codes" column contains numbered input fields (1. MB102, 2. MB106, 3. MB363, 4. [empty], 5. [empty], 6. [empty], 7. [empty], 8. [empty], 9. [empty], 10. [empty], 11. [empty], 12. [empty], 13. [empty]). The "Option" column is a dropdown menu listing various academic options. The option "MB363 - Management Decision Tools (3 AU)" is selected and highlighted with a blue background. Other listed options include General Education in Business & Management, General Education in Science, Technology & Society, Minor in Applied Physics, Minor in Bioprocessing Technology, Minor in Chemistry and Biological Chemistry, Minor in Chinese, Minor in Computing, Minor in Communication Studies, Minor in Drama & Performance, Minor in Economics, Minor in Education Studies, Minor in English Literature(NTU), Minor in Environmental Management, Minor in English Language, Minor in History (NTU), Minor in Public Administration, and Minor in Information-Communication Technology.

Figure 7: NTU enrollment system

# CHAPTER 2

## DESIGN

### 2. DESIGN INSPIRATIONS, PRIOR WORK & COMPARISON TO OTHER EXISTING INTERFACES

The screenshot shows the NTU STARS Planner for the Academic Year 2007, Semester 1. The main area is a weekly timetable grid from Monday to Saturday. Courses are listed in the grid, and some are highlighted with red boxes. A sidebar on the right lists courses by category and shows an exam schedule.

TIME/DAY	MON	TUE	WED	THU	FRI	SAT
0830-0900				EE4344 LE LT22; EE4040 Y04 TR66- WK2-13;		
0900-0930				EE4265 LE LT29; EE4041 Y25 TR73- WK2-13;		
0930-1000						
1000-1030						
1030-1100	EE4265 LE LT29;	EE4647 LE LT29;		EE4041 Y25 TR73- WK2-13;	EE4647 LE LT29;	
1100-1130						
1130-1200	EE4344 LE LT22;					
1200-1230						
1230-1300					EE4001 L2 LT27;	
1300-1330			MB101 LE1 LT2A;			
1330-1400	EE4344 F21 TR66- WK2-13;	EE4265 F42 TR66- WK2-13;				

**Course Index / Vacancy/ Waitlist**

- EE4344 34161 / 0 / 0
- EE8062 32218 / 19 / 0
- MB101 00704 / 3 / 0
- EE4265 34140 / 16 / 0
- EE4647 34187 / 42 / 0
- EE4040 34060 / 0 / 0
- EE4001 34026 / 0 / 0
- EE4041 34087 / 0 / 0
- LG80 -Select one-
- LF80 -Select one-
- MB106 00758 / 0 / 0

**Exam Schedule**

- MB106 15-NOV-06 1300 1500
- EE4047 16-NOV-06 1300 1500
- EE4041 17-NOV-06 0900 1100
- EE4001 20-NOV-06 0900 1100
- LF80 20-NOV-06 1300 1530
- MB101 20-NOV-06 1300 1530

Figure 8: NTU enrollment system

Another inspiration derives from NTU's enrollment system where they have preset course categorization and a large interactive calendar for course scheduling as shown in Figure 8. Courses are categorized into majors and minors for easy referencing which further structures into year accordance, such that students can pick from the relevant course pertaining to their year of studies. Hence, this allows individuals to easily look under the section for classes that are applicable to their studies. For the course calendar, it acts similarly to UBC's preview schedule, but students can make changes directly on the timetable. Also, due to an informative layout, it provides clear indications of subject eligibility and whether the selected course fulfills core modules or electives that students need. After studying this system, the categorization method and manipulative timetable are considered which can enhance the effectiveness of class registration. The influence of having explicit category for course search by year and major has lead the team to create a system with components, such as the degree already set in student accounts. The reason is that it enables fast selection where options of core courses are directly available. In short, the implementations of the two features will increase efficiency in course search, which improves the speed of the enrollment process other than using basic search functions, such as course catalog.

Word count: 400 of [200- 400 words allowed]

# CHAPTER 2

# DESIGN

## 3. CONCEPTUAL DESIGN A

### 3.1 Overview and Description of Conceptual Design A

The SFU website home page is displayed. At the top, the SFU logo and the tagline "SIMON FRASER UNIVERSITY ENGAGING THE WORLD" are visible. Below the logo, there are links for SFU.CA, Burnaby, Surrey, and Vancouver. On the right side of the header, there are links for SFU Online, A-Z Links, and a search bar. The main content area features a large banner with a woman working on a loom, the text "ENGAGING RESEARCH", and a subtext about becoming Canada's leading engaged research university. Below the banner, there is a news section titled "News around campus" and a "Special features" section. The "News around campus" section includes a link to a Thursday soccer game. The "Special features" section includes a link to a lecture by Prof. Alexandra Fedorova. To the right, there is a sidebar with links for Students, About SFU, Administration, and SFU FACTS. The sidebar also features logos for British Columbia EQA and NCAA.

Figure 9: SFU website home page

For this concept, the layout consists of the system's features displayed explicitly which are separated into various sections across the screen, integrating the overall SFU web standards to achieve consistency with the university's main website and to emphasize important details for course strategizing. Rather than having a collapsible drop-down menu which hides visibility of a student's current task, a menu found on the left side can provide easy access to sections in the system, such as the enrollment page.

# CHAPTER 2 DESIGN

## 3. CONCEPTUAL DESIGN A

SIMON FRASER UNIVERSITY  
THINKING OF THE WORLD

Welcome, MATTHEW CHANG

HOME LOGOUT

Student Admission  
Transfer Credit  
Enrollment  
Campus Personal Information  
Academic Records  
Campus Finances  
Graduation/Convocation  
Degree Progress  
Advisment  
Account Settings  
Help

**Academics**

FALL 2012

Time	Monday Sep 10	Tuesday Sep 11	Wednesday Sep 12	Thursday Sep 13	Friday Sep 14
8:00AM					
9:00AM					
10:00AM					
11:00AM	IAT 337 - D100 1:30PM - 2:20PM Surrey Campus 3090		IAT 201 - D100 1:30PM - 2:20PM Surrey Campus 2600	IAT 320 - E102 10:30AM - 12:20PM Surrey Campus 3100	
12:00PM					
1:00PM		IAT 337 - D103 1:30PM - 2:20PM Surrey Campus 3100	IAT 201 - D104 1:30PM - 2:20PM Surrey Campus 3100	IAT 320 - E103 12:30PM - 2:20PM Surrey Campus 3100	
2:00PM					
3:00PM					
4:00PM					
5:00PM			IAT 320 - E100 1:30PM - 2:20PM Surrey Campus 3310		
6:00PM					

Course Catalog  
WQB Courses  
Advanced Class Search  
View my Schedules  
View my Grades

**NOTIFICATION**

Last day for Tuition Fee without any Penalty is December 25, 2012

Last day for Course Enrollment without any Penalty is November 28, 2012

**Finance**

You have an overdue amount of:  
**\$1932.40**

Make a payment  
Account Inquiry  
Financial Aid

**Admission**

Figure 10: Prototype A

On the other hand, the display of course information on a single page prevents the constraint of having one type of information on one page because it is tedious to flip back and forth between two pages to check availability of other lab sections in accordance to view course eligibility on a different page. Furthermore, by simply having a green circle to indicate that the course is open does not allow students to know the course capacity. As shown in Figure 11, the advance search function provides quick filters on the right and once a student adds a class, they can preview their schedule in the calendar and be satisfied before enrolling in all their courses to prevent error-tolerance of course conflicts.

# CHAPTER 2 DESIGN

## 3. CONCEPTUAL DESIGN A

### 3.1 Overview and Description of Conceptual Design A

Figure 11: Prototype A - Advanced Search

Figure 12: Prototype A - Course Catalog

# CHAPTER 2

## DESIGN

### 3. CONCEPTUAL DESIGN A

#### 3.1 Overview and Description of Conceptual Design A

(continued)

At last, with the use of more information, students can easily plan their courses using the schedule preview without the need to flip through pages and to simply click on the “enroll” button when the time allows, where course selection is all done on one page.

Word count: 247 of [100- 250 words allowed]

#### 3.2 Design Hypotheses

Prior to creating an improved design for the SFU enrollment system, certain hypotheses were developed in order to guide the team to test important features of the new system. Hence, prototype A targets significantly on functionality through the following hypotheses.

- If we integrate the overall web layout of the university’s main page onto SIS, then students will be able to find the enrollment page much quicker due to familiarity with the functionality of the SFU main website.
- If we put a visible menu on the left side of the screen instead of hidden drop-down menus, then users will have quick access to the menu to view other sections of the system to perform tasks.
- If we place the “course catalog” and “advance search” button on the main page next to the student’s current course schedule, then a subject will use it at their advantage to have more than one type of search to choose most comfortable and efficient method.

Word count: 149 of [100 - 150 words allowed]

# CHAPTER 2

## DESIGN

### 3. CONCEPTUAL DESIGN A

#### 3.3 Interaction Paradigm & Interface Metaphors

##### **Interaction Paradigm**

The interaction design paradigm for the creation of prototype A deviates a little from the one employed during the creation of prototype B. While the latter seeks to decompose complex tasks, eliminate redundant functions and employ a minimalistic approach in designing the interface, the former one tries to achieve the same by optimizing on screen real estate while retaining a similar informational flow as the current interface. Using organizational methods, prototype A lowers the amount of information selection, showing only what needs to be shown thereby allowing users to do more with lesser information. For instance, there are clear options available in the form of categories which displays only relevant to the task being searched. As portrayed in Figure 4, each drop-down selection is based on the item that a student can pick out to prevent distraction. By reducing irrelevant information that serves no purposes to the users, the team was able to populate the screen with more meaningful information that assists the users in making their academic choices at a single glance.

##### **Interface Metaphors**

In creating the user interface for prototype A, the approach undertaken was very much different when compared to prototype B. Instead of hiding the details, the latter does it by displaying all the essential functions on a spreadsheet, providing a bird's eye view on all the crucial details. A collapsible menu within a menu bar serves as a book binder to hide all the inessential details while displaying the relevant ones on the entire right area.

Word count: 249 of [100- 250 words allowed]

# CHAPTER 2

# DESIGN

## 4. CONCEPTUAL B

### 4.1 Overview and Description of Conceptual Design B

The screenshot displays the 'WEEKLY SCHEDULE' and 'EXAM SCHEDULE' sections of Prototype B. The weekly schedule shows a grid from Monday Dec 3 to Sunday Dec 9, with time slots from 8:00AM to 6:00PM. A specific slot on Wednesday at 1:00PM is highlighted with a red box containing 'BUS 201-D203 SURVEY 3090'. The exam schedule lists one final exam for 'Introduction to Business (Lecture)' on December 10th from 8:30AM to 11:30AM in SUR5280.

Time	Monday Dec 3	Tuesday Dec 4	Wednesday Dec 5	Thursday Dec 6	Friday Dec 7	Saturday Dec 8	Sunday Dec 9
8:00AM							
9:00AM							
10:00AM							
11:00AM							
12:00PM							
1:00PM							
2:00PM							
3:00PM							
4:00PM							
5:00PM							
6:00PM							

Class	Description	Exam Type	Exam Date	Schedule	Location
BUS 201-D100 (8788)	Introduction to Business (Lecture)	Final	2012/12/10	8:30AM – 11:30AM	SUR5280

Figure 13: Prototype B

For prototype B, the main page of SIS is organized in tabs to display the hidden menu components found in the original website and serves a purpose of organizing course searches, which reflects to the concept of a tabbed skeuomorphic organizer, as displayed Figure 13. On the enrollment page which can be seen in Figure 14, an emphasis is made on the editable course schedule calendar.

# CHAPTER 2

## DESIGN

### 4. CONCEPTUAL B

#### 4.1 Overview and Description of Conceptual Design B

The screenshot displays a user interface for course enrollment. On the left, a sidebar titled "Course Search" shows dropdown menus for "2012 FALL", "BUS - BUSINESS", and "201". Below these are lists of course sections with their names, instructors, and current enrollment status (e.g., 10/50, 18/50, 50/50). On the right, a "Schedule Preview" grid shows a weekly timeline from Monday Dec 3 to Sunday Dec 9, with time slots from 8:00AM to 6:00PM. A specific slot on Tuesday at 12:00PM is highlighted in blue, containing text about a lecture for BUS 201 - D003. At the bottom are "Reset Courses" and "Enroll Courses" buttons.

Figure 14: Prototype B

Using the left tabs, a student can select terms, courses and course sections to narrow down their search quickly and enroll. As a student adds their courses, the time slot on the calendar is automatically updated. However, if changes need to be made at the class search stage, a user can simply click on the tabs to go back. For instance, if a user accidentally pressed on the wrong subject to enroll in, the adjustment can be made by clicking on the “Select Course” tab and it will direct the individual to that section within the tab without changes being made to the interactive schedule. Also, if a student wants to do a course edit, they can simply click on the course in the time slot of the calendar and make changes such as dropping or changing course sections. Therefore, the implementation of a visual calendar allows students to see an outline of their courses before registering in all the classes and that easy edits can be made directly on the schedule.

Word count: 238 of [100- 250 words allowed]

# CHAPTER 2

## DESIGN

### 4. CONCEPTUAL B

#### 4.2 Design Hypothesis

In redesigning the SFU SIS, the team considered many factors before deciding on an approach to improve the system. While the first prototype retains a similar structure as the current system, the team decided to approach prototype B with a different design methodology based on a separate design hypothesis.

- If we simplify the interface by categorizing relevant interface options, then users can quickly navigate through the site by accessing their interests in relation to each category
- If we arrange the information tabs similar to a typical organizer, then users will understand how similar options are grouped together and access them in a way similar to how they would use an organizer
- If we introduce an interactive calendar, then it reduces the cognitive load on students during course registration and allow them to make changes rapidly
- If we change the search structure by categorizing course selection using tabs rather than drop-down menus, then it reduces the amount of time students need to read through the list of available options and be able to make a faster selection
- If we constrain course enrollment on one page, then a student will finish adding all the courses they want before clicking on the “enroll” button

Word count: 200 of [75- 200 words allowed]

#### 4.3 Interaction Paradigm & Interface Metaphors

# CHAPTER 2

## DESIGN

### 4. CONCEPTUAL B

#### 4.3 Interaction Paradigm & Interface Metaphors

##### **Interaction Paradigm**

The interaction design paradigm revolves around the understanding of user's goals and modeling the tasks that potential users seek to accomplish. Hence, the team approached this problem by decomposing complex tasks into primitive tasks that leads to clear cut goals to be executed and evaluated. Tasks that do not immediately serve any direct goals were combined or eliminated altogether to reduce the total time required to achieve a certain goal. For instance, tasks found in the "Academics" tab were consolidated under one visual timetable while removing redundant tasks such as the "add" and "drop" functions which has been replaced with "more details." Using the "more detail" option, it brings the user into a full featured enrollment system rather than offering confusing options to enroll on the main page. All in all, simplistic interface allows quick navigation for the enrollment process.

##### **Interface Metaphors**

Instead of pursuing a purely skeuomorphic approach towards designing the interface, the team chose to apply the concept of an organizer metaphorically to the design scheme. Functions are arranged in a manner that resonates with a "To-Do-List" notepad so users can identify outstanding tasks that are left undone on the system at a glance. Courses are arranged in a conventional timetable schedule akin to a weekly organizer and selection of courses can be done through a collapsible sidebar menu. This follows a metaphorical concept drawn from a side cupboard that stores any important documents, keeping irrelevant information hidden to minimize cognitive load on users, but clearly labeled and shown too.

Word count: 250 of [100- 250 words allowed]

# CHAPTER 2

## DESIGN

### 5. COMPARISON OF CONCEPTUAL DESIGN A & B

Aspects to Compare	Conceptual Design A (Prototype A)	Conceptual Design B (Prototype B)
Timetable: Enlarge it for students to see their course schedule clearly and provide interactivity.	<ul style="list-style-type: none"><li>Integrated a schedule preview at the right corner</li><li>When a user adds a course, it updates</li></ul>	<ul style="list-style-type: none"><li>Provided a large schedule to manipulate courses during enrollment</li><li>Updates automatically</li></ul>
Course Strategizing: Help students plan courses ahead of time or during enrollment	<ul style="list-style-type: none"><li>In the advance search, students can quickly filter to WQB courses</li><li>A schedule preview aids in preventing course conflicts</li></ul>	<ul style="list-style-type: none"><li>With a large schedule display, students can easily see where their courses are placed throughout their week</li></ul>
Class Search: Simplify searching methods for efficient course browsing and enrollment process	<ul style="list-style-type: none"><li>The course catalog provides course search in an alphabetic order</li><li>The advance search helps users narrow down to what they need without the need to remember course codes</li></ul>	<ul style="list-style-type: none"><li>Searching is done using tabs on the left with no typing required</li></ul>
Class Manipulation: Require less amount of clicks to add courses during the enrollment process.	<ul style="list-style-type: none"><li>Classes can be added by clicking on the blue “add” button</li><li>Once all the courses are selected, users press “enroll” underneath the schedule preview</li></ul>	<ul style="list-style-type: none"><li>All the courses are selected using tabs on the left</li><li>Then, “enroll” button is clicked to enroll in all of the courses at once</li></ul>

# CHAPTER 2

## DESIGN

### 5. COMPARISON OF CONCEPTUAL DESIGN A & B

(continued)

Aspects to Compare	Conceptual Design A (Prototype A)	•Conceptual Design B •(Prototype B)
Show Menu: Menu is kept visible to easily access other sections of the system	<ul style="list-style-type: none"><li>The menu has been placed on the left for less pop-out effect</li><li>Visible at all times to let users click on them for further searching</li></ul>	<ul style="list-style-type: none"><li>Major features are displayed on the left tabs and at the top of the screen</li><li>The blue bar signify importance by being at the top, but the blue prevents users from focusing it because blue does not stand out too much in our eyes</li></ul>
Visual Organization: By implementing clear hierarchy, users will be able to find their needs	<ul style="list-style-type: none"><li>All the major sections of the system are placed on the left</li><li>Sub-sections are shown after clicking</li></ul>	<ul style="list-style-type: none"><li>System usability are found at the top and personal information are found at the bottom through tabs</li></ul>
Tabs: Student information and course selections are organized in tabs	<ul style="list-style-type: none"><li>Reduces redundant steps, which will decrease number of clicks that user has to make</li></ul>	<ul style="list-style-type: none"><li>Faster enrollment process and less hassle with navigating back and forth between each tabs to perform add, edit, a swap</li></ul>
Back Button: More flexible navigation when it is used with the web browser and when it is a larger button	<ul style="list-style-type: none"><li>Utilizes web browser's back button</li></ul>	<ul style="list-style-type: none"><li>It is integrated within the system using a large button</li></ul>
Consistent Layout: Uses SFU web design standards	<ul style="list-style-type: none"><li>Uses similar aesthetic as the SFU website</li></ul>	<ul style="list-style-type: none"><li>Uses same colours and similar designs as SFU</li></ul>

Word count: 300 of [150- 300 words allowed]

# CHAPTER 2

## DESIGN

### 6. REFLECTION: DESIGNING FOR HUMANS

In redesigning the SFU SIS interface, one is faced with the problem of displaying the large amount of information and functions present in a coherent way. The real challenge, however, lies in presenting relevant information at the right stage within the constraints of the screen real estate. In order to avoid overloading the cognitive ability of an average student, one has to consider the types of information to display at different stages over the entire usage duration of the course enrollment process.

With the challenges encountered, there were several design principles that the design team adhered to while formalising important design decisions. Some principles consists of improving the aesthetic appeal of the interface while creating clear distinctions between important functions, as well as others were governed by the human perception to view objects such as the control of selective biases and Gestalt principles.

#### **Control of Selective Biases**

Control of selective biases occurs as our eyes and brains are adept at filtering out detractors from other similar shapes which allows us to perceive shapes when focusing on a particular item. By applying this technique, it is of the interests of the design team to guide the visual interests of the students who are using the system towards the area of interests, such as the enrollment button to lead them into the enrollment page for course selections.

#### **I**Gestalt Principle

On the other hand, the Gestalt principles play a role during the design phase where several guidelines help governs how humans perceive objects and patterns. The most prevalent principles for the SFU SIS interface includes the use of similarity and proximity to group objects that have close resemblance to each other, together, thus the human mind categorizes them naturally.

# CHAPTER 2

## DESIGN

### 6. REFLECTION: DESIGNING FOR HUMANS

While the two principles discussed provides description behavior of how the human mind functions, there were other important aspects that we kept in mind while developing the interface which are luminance contrast, visual distinctness and learnability.

#### **Luminance Contrast and Visual Distinctness**

With a large selection of colour choices, there will be insufficient luminance contrast to uniquely distinguish one section from another. Furthermore, the lack in visual distinctness and learnability due to overuse of large range of colours will overwhelm the interface causing it to become ineffective. The reason for such is that having more colours in the background can distort the appearance of small patches of symbol colour, as well, leading to the confusion of one symbol with another on the SIS interface. Lastly, the use of too much colour will alter the colour sequence of the designer's intents of the colour sequence as well to illustrate any form of change in intensity or quantitative value, which the team has decided to follow SFU graphic standards for consistency.

#### **Learnability**

There are several solutions available that can achieve the same end results without the use of more than twenty colours. Standard convention dictates the number of colour choice to be limited anywhere from six to twelve to avoid confusion. Therefore, learnability of visual icons can be improved by using unique hues such as red, green, yellow, and blue, followed by other colours that have relatively consistent swatches such as pink, brown, orange, grey and purple. Lastly, colour sequence can be implemented to give a sense of spatial layout without the need of any drastic change in colour.

As we reflect on our redesign of the SFU SIS enrollment system interface, understanding the needs of users is important, as well as what their bodies are capable of to fulfill user experience goals.



# **CHAPTER 3**

## **PROTOTYPING**

### **ID 3 REPORT**

TEAM LEADER . YAN YAO LI

# CHAPTER 3

## PROTOTYPING

### 1. ILLUSTRATION OF TASK PURSUED WITH PROTOTYPES

#### 1.1 Illustration of Task Pursued with Prototype A

In prototype A, there are two ways for students to enroll in a course.

##### Way 1 - Course Catalog

The screenshot shows the Simon Fraser University (SFU) SIS homepage. The top navigation bar includes the SFU logo, "SIMON FRASER UNIVERSITY THINKING OF THE WORLD", "Welcome, MATTHEW CHANG", "HOME", and "LOGOUT". On the left, a sidebar menu lists: "Student Admission", "Transfer Credit", "Enrollment" (which is highlighted with a red border), "Campus Personal Information", "Academic Records", "Campus Finances", "Graduation/Convocation", "Degree Progress", "Advisement", "Account Settings", and "Help". The main content area has a grey header "Academics". Below it, a "FALL 2012" schedule grid shows class offerings from Monday, Sep 10, to Friday, Sep 14, at various times (8:00AM, 9:00AM, etc.). The grid includes course codes like IAT 337, IAT 201, and IAT 320, along with descriptions and locations (e.g., Surrey Campus 3090, 2600, 3100). To the right of the schedule, a "Course Catalog" section links to "WQB Courses" and "Advanced Class Search". Below these are "View my Schedules" and "View my Grades". A "NOTIFICATION" box on the right displays messages about tuition fees and course enrollment deadlines. At the bottom, there are "Finance" and "Admission" sections.

Step 1: At the main page of the Student Information System, students can select "Enrollment" where a drop-down menu will appear.

(continued on the next few pages)

Welcome, MATTHEW CHANG

[HOME](#) [LOGOUT](#)[Student Admission](#)[Transfer Credit](#)[Enrollment](#)[2. Course Catalog](#)[WQB Courses](#)[Advanced Class Search](#)[View my Schedules](#)[Distance Educ Materials](#)[Campus Personal Information](#)[Academic Records](#)[Campus Finances](#)[Graduation/Convocation](#)[Degree Progress](#)[Advisment](#)[Account Settings](#)[Help](#)

## Academics

FALL 2012

Time	Monday Sept 10	Tuesday Sept 11	Wednesday Sept 12	Thursday Sept 13	Friday Sept 14
8:00AM					
9:00AM					
10:00AM					
11:00AM		IAT 337 - D100 Lecture 10:30AM - 12:20PM Survey Campus 3090	IAT 201 - D100 Lecture 10:30AM - 12:20PM Survey Campus 2600	IAT 320 - E102 Workshop 10:30AM - 12:20PM Survey Campus 3100	
12:00PM			IAT 337 - D103 Lecture 12:30PM - 2:20PM Survey Campus 3100	IAT 201 - D104 Workshop 12:30PM - 2:20PM Survey Campus 3250	
1:00PM					
2:00PM					
3:00PM					
4:00PM					
5:00PM			IAT 320 - E100 Lecture 5:30PM - 6:20PM Survey Campus 3310		
6:00PM					

[Course Catalog](#)[WQB Courses](#)[Advanced Class Search](#)[View my Schedules](#)[View my Grades](#)

## NOTIFICATION

Last day for Tuition Fee without any Penalty is December 25, 2012

Last day for Course Enrollment without any Penalty is November 28, 2012

## Finance

You have an overdue amount of:

\$1932.40

[Make a payment](#)[Account inquiry](#)[Financial Aid](#)

## Admission

Step 2: For the second step, users can either click on the “Course Catalog” found on the left in the menu or simply clicking it in the “Academics” section to search for classes.

Welcome, MATTHEW CHANG

[HOME](#) [LOGOUT](#)[Student Admission](#)[Transfer Credit](#)[Enrollment](#)[Course Catalog](#)[WQB Courses](#)[Advanced Class Search](#)[View my Schedules](#)[Distance Educ Materials](#)[Campus Personal Information](#)[Academic Records](#)[Campus Finances](#)[Graduation/Convocation](#)[Degree Progress](#)[Advisment](#)[Account Settings](#)[Help](#)

## COURSE CATALOG

Simon Fraser University |  ▾[3. ABCDEFGHIJKLMNOPQRSTUVWXYZ](#)

- ACMA - ACMA Actuarial Mathematics
- ALS - ALS Applied Legal Studies
- APMA - APMA Applied & Comp Math
- ARCH - ARCH Archaeology
- ASC - ASC Asia - Canada

## SCHEDULE PREVIEW

Mon	Tue	Wed	Thu	Fri	Sat	Sun

[ENROLL](#)

Step 3: On the “Course Catalog” page, courses are sorted in an alphabetical order which is clearly organized. For example, a student is given a task to enroll in BUS 201 where they will click on the letter “B” for further class searches.

Welcome, MATTHEW CHANG

HOME LOGOUT

Student Admission

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WQB Courses

Advanced Class Search

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Account Settings

Help

### COURSE CATALOG

Simon Fraser University | 2012 Fall ▾

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

BISC - BISC Biological Sciences

BOT - BOT Back on Track

BUEC - BUEC Business Economics

4. BUS - BUS Business Administration

### SCHEDULE PREVIEW

Mon	Tue	Wed	Thu	Fri	Sat	Sun

ENROLL

Step 4: Then all the “B” subjects are shown and the student can click on “BUS.”

Welcome, MATTHEW CHANG

HOME LOGOUT

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Enrollment

Course Catalog

WQB Courses

Advanced Class Search

View my Schedules

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Advisment

Account Settings

Help

### COURSE CATALOG

Simon Fraser University | 2012 Fall ▾

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

BISC - BISC Biological Sciences

BOT - BOT Back on Track

BUEC - BUEC Business Economics

BUS - BUS Business Administration

5. BUS 201 - INTRODUCTION TO BUSINESS

BUS 207 - MANAGERIAL ECONOMICS

BUS 225 - CO-OP PRACTICUM I

BUS 237 - INFORMATION SYSTEMS IN BUSINESS

BUS 251 - FINANCIAL ACCOUNTING I

BUS 254 - MANAGERIAL ACCOUNTING I

BUS 272 - BEHAVIOR IN ORGANIZATIONS

BUS 303 - BUSINESS, SOCIETY AND ETHICS

BUS 312 - INTRODUCTION TO FINANCE

BUS 315 - INVESTMENTS

### SCHEDULE PREVIEW

Mon	Tue	Wed	Thu	Fri	Sat	Sun

ENROLL

Step 5: After selecting “BUS” all the Business courses are shown and the student will click on “BUS 201.”

Welcome, MATTHEW CHANG

HOME LOGOUT

- Student Admission
- Transfer Credit
- Enrollment**

  - Course Catalog
  - WQB Courses
  - Advanced Class Search
  - View my Schedules
  - Distance Educ Materials

- Campus Personal Information
- Academic Records
- Campus Finances
- Graduation/Convocation
- Degree Progress
- Advisment
- Account Settings
- Help

**COURSE CATALOG** Simon Fraser University | 2012 Fall ▾

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

BISC - BISC Biological Sciences  
BOT - BOT Back on Track  
BUEC - BUEC Business Economics  
BUS - BUS Business Administration

**BUS 201 - INTRODUCTION TO BUSINESS** Capacity: 30/50

Section D100 - LEC (8389)	Class Capacity 30/50	Wait List 0/5	<b>DETAILS</b>	<b>ADD</b>
Days and Times Th 14:30 - 17:20	Room SUR 5240	Instructor Andrew Gemini	Dates 2012/9/4 - 2012/12/3	

**BUS 207 - MANAGERIAL ECONOMICS** Capacity: 30/50  
**BUS 225 - CO-OP PRACTICUM I** Capacity: 30/50  
**BUS 237 - INFORMATION SYSTEMS IN BUSINESS** Capacity: 30/50  
**BUS 251 - FINANCIAL ACCOUNTING I** Capacity: 30/50  
**BUS 254 - MANAGERIAL ACCOUNTING I** Capacity: 30/50  
**BUS 272 - BEHAVIOR IN ORGANIZATIONS** Capacity: 30/50  
**BUS 303 - BUSINESS, SOCIETY AND ETHICS** Capacity: 30/50  
**BUS 312 - INTRODUCTION TO FINANCE** Capacity: 30/50  
**BUS 315 - INVESTMENTS** Capacity: 30/50

**SCHEDULE PREVIEW**

Mon	Tue	Wed	Thu	Fri	Sat	Sun

**ENROLL**

Step 6: By clicking on “BUS 201,” information has been expanded and if the student wants further detail, the “Detail” button can be selected.

- Student Admission
- Transfer Credit
- Enrollment**

  - Course Catalog
  - WQB Courses
  - Advanced Class Search
  - View my Schedules
  - Distance Educ Materials

- Campus Personal Information
- Academic Records
- Campus Finances
- Graduation/Convocation
- Degree Progress
- Advisment
- Account Settings
- Help

**COURSE CATALOG** Simon Fraser University | 2012 Fall ▾

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

BISC - BISC Biological Sciences  
BOT - BOT Back on Track  
BUEC - BUEC Business Economics  
BUS - BUS Business Administration

**BUS 201 - INTRODUCTION TO BUSINESS** Capacity: 30/50

Section D100 - LEC (8389)	Class Capacity 30/50	Wait List 0/5	<b>DETAILS</b>	<b>ADD</b>
Days and Times Th 14:30 - 17:20	Room SUR 5240	Instructor Andrew Gemini	Dates 2012/9/4 - 2012/12/3	

**Session** Regular   **Units** 3 units   **Class Required** Lecture   **Grading** Graded   **Career** Undergraduate   **Location** Surrey Campus

**Course Description**  
The management and operation of business, including the principles, concepts, ideas and tools used by managers. Management in the contemporary world of high technology is emphasized, featuring examples and cases involving high-tech firms. In addition, the course exposes students to international and local business issues, and to large companies as well as to smaller, entrepreneurial firms. Prerequisite: This course is only open to approved Business students. Students with credit for TECH 128, 129 and 130 or for BUS 130 may not take this course for further credit. Business students with greater than 45 units will not receive credit for BUS 201.

**Notes**  
Students other than those accepted into a program in Business Administration may NOT attempt registration in the following Business courses: Bus 201, 320, 321, 322, 329, 360W, 420, 421, 424, 426 and 427.

Registration in the following Business accounting courses is restricted to those Business students with an Accounting concentration or an Accounting Honors designation: Bus 321, 322, 329, 420, 421, 424, 426 and 427.

**Waitlists:** Some Business courses have waitlists. These waitlists are for the use of eligible Business students. While non-Business and ineligible students can add themselves to Business waitlists, they will be removed from the waitlists on a regular basis throughout the registration period.

**RETURN**

**BUS 207 - MANAGERIAL ECONOMICS** Capacity: 30/50

**SCHEDULE PREVIEW**

Mon	Tue	Wed	Thu	Fri	Sat	Sun

**ENROLL**

Step 7: Once the student is satisfied with the course either reading or without reading the details, the “Add” button can be clicked on to add the course to the schedule preview on the right.

- [Student Admission](#)
- [Transfer Credit](#)
- [Enrollment](#)
  - [Course Catalog](#)
  - [WQB Courses](#)
  - [Advanced Class Search](#)
  - [View my Schedules](#)
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- [Graduation/Convocation](#)
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- [Account Settings](#)
- [Help](#)

**COURSE CATALOG** Simon Fraser University | 2012 Fall ▾

A **B** C D E F G H I J K L M N O P Q R S T U V W X Y Z

BISC - BISC Biological Sciences  
BOT - BOT Back on Track  
BUEC - BUEC Business Economics  
BUS - BUS Business Administration

BUS 201 - INTRODUCTION TO BUSINESS			Capacity: 30/50
Section	Class Capacity	Wait List	
D100 - LEC (8389)	30/50	0/5	<a href="#">DETAILS</a> <a href="#">ADD</a>
Days and Times	Room	Instructor	Dates
Th 14:30 - 17:20	SUR 5240	Andrew Gemino	2012/9/4 - 2012/12/3
Session	Units	Class Required	Grading
Regular	3 units	Lecture	Graded
			Career
			Undergraduate
			Location
			Surrey Campus

**Course Description**

The management and operation of business, including the principles, concepts, ideas and tools used by managers. Management in the contemporary world of high technology is emphasized, featuring examples and cases involving high-tech firms. In addition, the course exposes students to international and local business issues, and to large companies as well as to smaller, entrepreneurial firms. Prerequisite: This course is only open to approved Business students. Students with credit for TECH 128, 129 and 130 or for BUS 130 may not take this course for further credit. Business students with greater than 45 units will not receive credit for BUS 201.

**Notes**

Students other than those accepted into a program in Business Administration may NOT attempt registration in the following Business courses: Bus 201, 320, 321, 322, 329, 360W, 420, 421, 424, 426 and 427.

Registration in the following Business accounting courses is restricted to those Business students with an Accounting concentration or an Accounting Honors designation: Bus 321, 322, 329, 420, 421, 424, 426 and 427.

Waitlists: Some Business courses have waitlists. These waitlists are for the use of eligible Business students. While non-Business and ineligible students can add themselves to Business waitlists, they will be removed from the waitlists on a regular basis throughout the registration period.

[RETURN](#)

**SCHEDULE PREVIEW**

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		<b>BUS 201</b>				

8. [ENROLL](#)

Step 8: Lastly, after the student adds all the courses they want to take and see that there is no conflict in their schedule in the preview section, they can click on “Enroll” and the process is over.

## Way 2 - Advanced Class Search

**SFU SIMON FRASER UNIVERSITY THINKING OF THE WORLD**

**Welcome, MATTHEW CHANG** [HOME](#) [LOGOUT](#)

- [Student Admission](#)
- [Transfer Credit](#)
- [Enrollment](#)
  - [Course Catalog](#)
  - [WQB Courses](#)
  - 1. Advanced Class Search**
  - [View my Schedules](#)
  - [Distance Educ Materials](#)
- [Campus Personal Information](#)
- [Academic Records](#)
- [Campus Finances](#)
- [Graduation/Convocation](#)
- [Degree Progress](#)
- [Advisment](#)
- [Account Settings](#)
- [Help](#)

**Academics**

FALL 2012					
Time	Monday Sep 10	Tuesday Sep 11	Wednesday Sep 12	Thursday Sep 13	Friday Sep 14
8:00AM					
9:00AM					
10:00AM					
11:00AM	IAT 337 - D100 Lecture 10:30AM - 12:00PM Surrey Campus 2090	IAT 281 - D100 Lecture 10:30AM - 12:00PM Surrey Campus 2600	IAT 320 - E102 Studio Lab 10:30AM - 12:30PM Surrey Campus 3100		
12:00PM					
1:00PM		IAT 337 - D100 Studio Lab 12:30PM - 2:00PM Surrey Campus 3100	IAT 301 - D104 Workshop 12:30PM - 2:00PM Surrey Campus 3250		
2:00PM					
3:00PM					
4:00PM					
5:00PM					
6:00PM		IAT 320 - E100 Studio Lab 5:30PM - 6:00PM Surrey Campus 3310			

**Course Catalog**  
**WQB Courses**  
**Advanced Class Search**

[View my Schedules](#) [View my Grades](#)

**NOTIFICATION**

Last day for Tuition Fee without any Penalty is December 25, 2012

Last day for Course Enrollment without any Penalty is November 28, 2012

**Finance**

You have an overdue amount of:  
**\$1932.40**

[Make a payment](#) [Account inquiry](#) [Financial Aid](#)

**Admission**

Step 1: On the main page, after opening the “Enrollment” drop-down menu, a student can either use the drop-down menu or the option found in the “Academics” section to click on “Advanced Class Search” to search for their courses.

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Welcome, MATTHEW CHANG

HOME LOGOUT

Student Admission

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### ADVANCED SEARCH

Please select your options on the right then click search.

TERM	Fall 2012
MAJOR	Business
DEGREE	Bachelor
YEAR	2012
WQB	
LOCATION	
COURSE #	

SEARCH

### SCHEDULE PREVIEW

Mon	Tue	Wed	Thu	Fri	Sat	Sun

Step 2: Then it leads to a page where the term, major and degree have been preset and the user simply needs to fill in the year of the course they want.

Welcome, MATTHEW CHANG

HOME LOGOUT

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### ADVANCED SEARCH

Please select your options on the right then click search.

TERM	Fall 2012
MAJOR	Business
DEGREE	Bachelor
YEAR	First
	Second
	Third
	Fourth
COURSE #	

SEARCH

### SCHEDULE PREVIEW

Mon	Tue	Wed	Thu	Fri	Sat	Sun

Step 3: For instance, to enroll in BUS 201, it is considered as a second year course where the student will select “Second” under “Year.”

Welcome, MATTHEW CHANG

HOME LOGOUT

- Student Admission
- Transfer Credit
- Enrollment
  - Course Catalog
  - WQB Courses
  - Advanced Class Search
  - View my Schedules
  - Distance Educ Materials
- Campus Personal Information
- Academic Records
- Campus Finances
- Graduation/Convocation
- Degree Progress
- Advisment
- Account Settings
- Help

#### ADVANCED SEARCH

Please select your options on the right then click search.

TERM	Fall 2012
MAJOR	Business
DEGREE	Bachelor
YEAR	Second
WQB	
LOCATION	Burnaby
	Surrey
	Vancouver

SEARCH

#### SCHEDULE PREVIEW

Mon	Tue	Wed	Thu	Fri	Sat	Sun

Step 4: Afterwards, if a student is looking for a WQB requirement course, then they can select that option. Following that, the student can select which campus that they want where in this case, there is a BUS 201 offering at the Surrey campus, which has been selected.

- Student Admission
- Transfer Credit
- Enrollment
  - Course Catalog
  - WQB Courses
  - Advanced Class Search
  - View my Schedules
  - Distance Educ Materials
- Campus Personal Information
- Academic Records
- Campus Finances
- Graduation/Convocation
- Degree Progress
- Advisment
- Account Settings
- Help

#### ADVANCED SEARCH

Please select your options on the right then click search.

TERM	Fall 2012
MAJOR	Business
DEGREE	Bachelor
YEAR	Second
WQB	
LOCATION	Surrey

5. COURSE #

SEARCH

#### SCHEDULE PREVIEW

Mon	Tue	Wed	Thu	Fri	Sat	Sun

Step 5: If a student wants to narrow their search even further and that they are certain of the course number, they can enter it where BUS 201 involves the numbers of "201." Otherwise, a student can simply click the search button to view all the second year Business courses that are offered at Surrey.

**Student Admission**

**Transfer Credit**

**Enrollment**

- [Course Catalog](#)
- [WQ8 Courses](#)
- [Advanced Class Search](#)
- [View my Schedules](#)
- [Distance Educ Materials](#)

**Campus Personal Information**

- [Academic Records](#)
- [Campus Finances](#)
- [Graduation/Convocation](#)
- [Degree Progress](#)
- [Advisment](#)
- [Account Settings](#)
- [Help](#)

### ADVANCED SEARCH

Please select your options on the right then click search.

TERM	Fall 2012
MAJOR	Business
DEGREE	Bachelor
YEAR	Second
WQ8	
LOCATION	Surrey
COURSE #	
201 <span style="border: 2px solid red; padding: 2px 10px;">SEARCH</span> 6.	

**SCHEDULE PREVIEW**

Mon	Tue	Wed	Thu	Fri	Sat	Sun

ENROLL

Step 6: After the students have selected all the options for their task, by clicking the “Search” button, the system will search out all the courses, which fit the requirements.

**Student Admission**

**Transfer Credit**

**Enrollment**

- [Course Catalog](#)
- [WQ8 Courses](#)
- [Advanced Class Search](#)
- [View my Schedules](#)
- [Distance Educ Materials](#)

**Campus Personal Information**

- [Academic Records](#)
- [Campus Finances](#)
- [Graduation/Convocation](#)
- [Degree Progress](#)
- [Advisment](#)
- [Account Settings](#)
- [Help](#)

### ADVANCED SEARCH

**BUS 201 - INTRODUCTION TO BUSINESS** Capacity: 30/50

Section D100 - LEC (6788)	Class Capacity 30/50	Wait List 0/5	7. <span style="border: 2px solid red; padding: 2px 10px;">ADD</span>
Days and Times Wed 14:30 - 17:20	Room SUR 5240	Instructor Andrew Gemino	Dates 2012/9/4 - 2012/12/3
Session Regular	Units 3 units	Class Required Lecture	Grading Graded
			Career Undergraduate

**Course Description**

The management and operation of business, including the principles, concepts, ideas and tools used by managers. Management in the contemporary world of high technology is emphasized, featuring examples and cases involving high-tech firms. The course will expose students to international and local business issues, and to large companies and to smaller, entrepreneurial firms. Prerequisite: Only open to approved Business students. Students with credit for TECH 128, 129 and 130 or for BUS 130 may not take this course for further credit. Business students with greater than 45 units will not receive credit for BUS 201.

**Notes**

The Beedie School of Business has placed registration restrictions on BUS 201. All seats in this course are reserved for approved Business Administration majors, joint majors, honors and minors. Non-Business students cannot enroll.

Registration in upper division Business Administration courses is open only to students approved in a Business plan (defined as a major, minor, honors and joint programs). Students are permitted to undertake the lower division business courses, except for BUS 201, without formal faculty admission.

Other than those accepted into a program in Business Administration may try registration in upper division courses contingent upon prerequisites met and space available on the day BEFORE the first day of classes. For the Fall 2012 semester is Monday, September 3rd. Non-Business students cannot register in upper division Business courses after the first week of classes for these courses: Bus 201, 320, 321, 322, 329, 360W, 420, 421, 424, 426 and 427.

Registration in the following Business accounting courses is restricted to those Business students with an Accounting concentration or an Accounting Honors designation: Bus 321, 322, 329, 420, 421, 424, 426 and 427.

**Waitlists:** Some Business courses have waitlists which are for the use of eligible Business students. Non-Business and ineligible students can add themselves to Business waitlists, but will be removed.

\*All seats within sections are reserved for approved Business Administration, and approved Management Systems Science majors, honors and minors with 60 or more credit hours: BUS 343, 360W, 361 and 440.  
 \*All seats within sections are reserved for approved Business Administration and approved Engineering Science majors, honors and minors with 60 or more credit hours: BUS 444, 374, 393, and 446.  
 \*All seats within sections are reserved for approved Business Administration and approved Actuarial Science majors, honors and minors with 60 or more credit hours: BUS 312, 315, 316, 360W, 410, 413, 417, 418 and 419

**SCHEDULE PREVIEW**

Mon	Tue	Wed	Thu	Fri	Sat	Sun

ENROLL

Step 7: After viewing the detail to make sure a student is eligible for the course, they can add it to their preview calendar by selecting the “Add” button.

Student Admission  
Transfer Credit  
**Enrollment**

- [Course Catalog](#)
- [WQB Courses](#)
- [Advanced Class Search](#)
- [View my Schedules](#)
- [Distance Educ Materials](#)

Campus Personal Information  
Academic Records  
Campus Finances  
Graduation/Convocation  
Degree Progress  
Advisement  
Account Settings  
Help

### ADVANCED SEARCH

BUS 201 - INTRODUCTION TO BUSINESS Capacity: 30/50

Section	Class Capacity	Wait List	
D100 - LEC (6788)	30/50	0/5	<b>ADD</b>

Days and Times Room Instructor Dates

Wed 14:30 - 17:20 SUR 5240 Andrew Gemino 2012/9/4 - 2012/12/3

Session	Units	Class Required	Grading	Career
Regular	3 units	Lecture	Graded	Undergraduate

**Course Description**  
The management and operation of business, including the principles, concepts, ideas and tools used by managers. Management in the contemporary world of high technology is emphasized, featuring examples and cases involving high-tech firms. The course will expose students to international and local business issues, and to large companies and to smaller, entrepreneurial firms. Prerequisite: Only open to approved Business students. Students with credit for TECH 128, 129 and 130 or for BUS 130 may not take this course for further credit. Business students with greater than 45 units will not receive credit for BUS 201.

**Notes**  
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Other than those accepted into a program in Business Administration may try registration in upper division courses contingent upon prerequisites met and space available on the day BEFORE the first day of classes. For the Fall 2012 semester is Monday, September 3rd. Non-Business students cannot register in upper division Business courses after the first week of classes for these courses: Bus 201, 320, 321, 322, 329, 360W, 420, 421, 424, 426 and 427.

Registration in the following Business accounting courses is restricted to those Business students with an Accounting concentration or an Accounting Honors designation: Bus 321, 322, 329, 420, 421, 424, 426 and 427.

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 \*All seats within sections are reserved for approved Business Administration and approved Engineering Science majors, honors and minors with 60 or more credit hours: BUS 444, 374, 393, and 446.  
 \*All seats within sections are reserved for approved Business Administration and approved Actuarial Science majors, honors and minors with 60 or more credit hours: BUS 312, 315, 316, 360W, 410, 413, 417, 418 and 419

TERM	Fall 2012
MAJOR	Business
DEGREE	Bachelor
YEAR	Second
WQB	
LOCATION	Surrey

COURSE #

**SEARCH**

**SCHEDULE PREVIEW**

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		BUS 201				

**8. ENROLL**

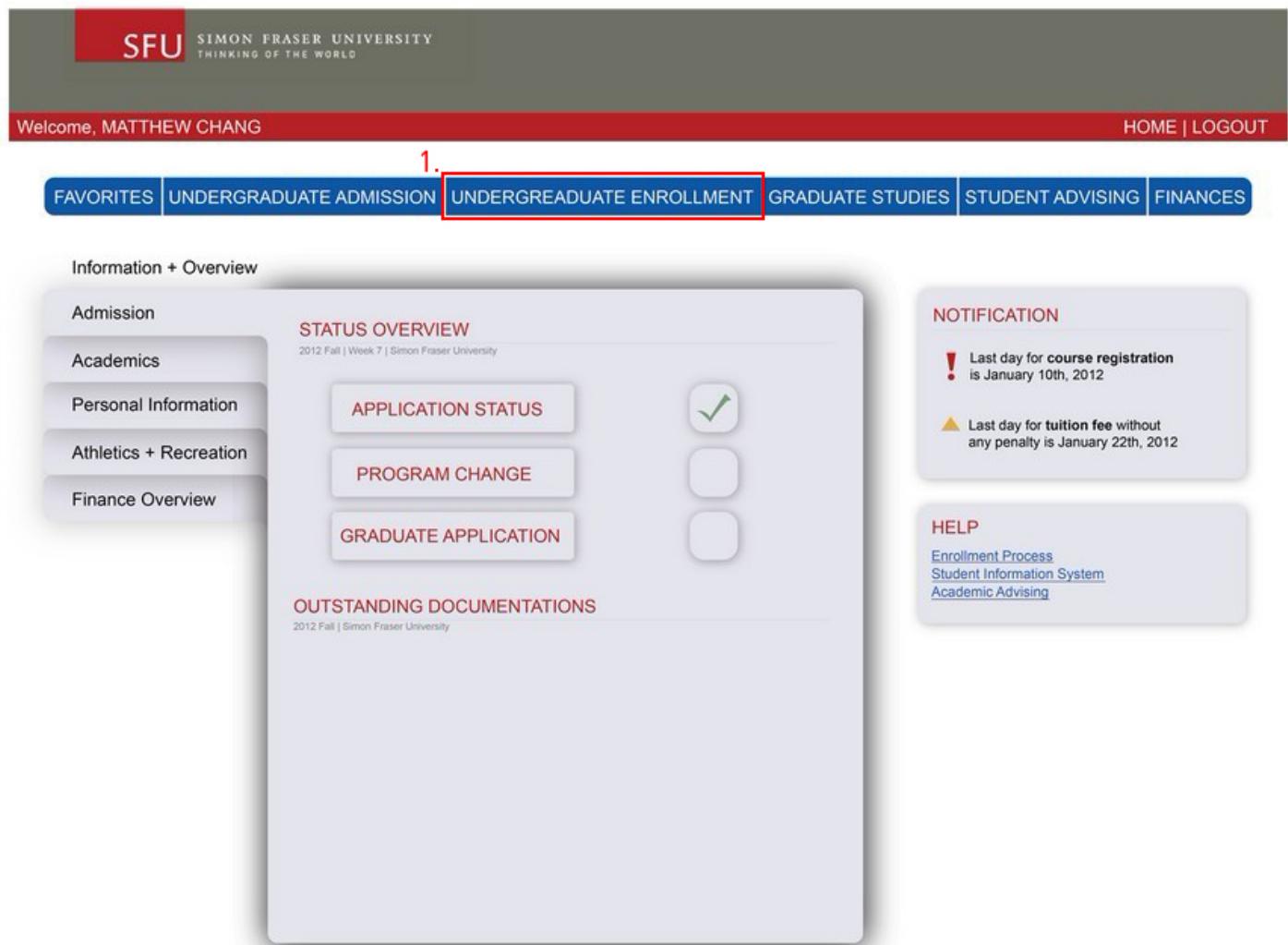
Step 8: Once the student is satisfied with all their courses, then they can select the “Enroll” button.

# CHAPTER 3

## PROTOTYPING

### 1. ILLUSTRATION OF TASK PURSUED WITH PROTOTYPES

#### 1.2 Illustration of Task Pursued with Prototype B



Step 1: After the student logs into the Student Information System, to enroll, they will select the “Undergraduate Enrollment” button.

(continued on the next few pages)

2.

Course Search		Schedule Preview						
Select Term		Monday Dec 3	Tuesday Dec 4	Wednesday Dec 5	Thursday Dec 6	Friday Dec 7	Saturday Dec 8	Sunday Dec 9
Fall 2012								
Summer 2012								
Spring 2012								
Fall 2011								
Summer 2011								
Spring 2011								
Fall 2010								

Time: 8:00AM, 9:00AM, 10:00AM, 11:00AM, 12:00PM, 1:00PM, 2:00PM, 3:00PM, 4:00PM, 5:00PM, 6:00PM

[Reset Courses](#) [Enroll Courses](#)

Step 2: Which leads them to the enrollment page and they will select the term that they want to enroll in.

3.

Course Search		Schedule Preview						
2012 FALL		Monday Dec 3	Tuesday Dec 4	Wednesday Dec 5	Thursday Dec 6	Friday Dec 7	Saturday Dec 8	Sunday Dec 9
Select Course								
BUS - Business								
CBMF - MGMT & PROF PROG								
CHEM - CHMISTRY								
CHIN - CHINESE								
CMNS - COMMUNICATIONS								
CMNS - COMMUNICATIONS								
CMPT - COMPUTING SCIENCE								

Time: 8:00AM, 9:00AM, 10:00AM, 11:00AM, 12:00PM, 1:00PM, 2:00PM, 3:00PM, 4:00PM, 5:00PM, 6:00PM

[Reset Courses](#) [Enroll Courses](#)

Step 3: For instance, to register in BUS 201, the Business course will be clicked on.

**Course Search**

2012 FALL	▼
BUS - BUSINESS	▼
4. BUS 201 - Intro to Business	
BUS 207 - Managerial Economics	
BUS 225 - Co-op Practicum I	
BUS 237 - Information Systems in Bus	
BUS 251 - Financial Accounting I	
BUS 254 - Managerial Accounting I	
BUS 272 - Behavior in Organizations	

**Schedule Preview**

Time	Monday Dec 3	Tuesday Dec 4	Wednesday Dec 5	Thursday Dec 6	Friday Dec 7	Saturday Dec 8	Sunday Dec 9
8:00AM							
9:00AM							
10:00AM							
11:00AM							
12:00PM							
1:00PM							
2:00PM							
3:00PM							
4:00PM							
5:00PM							
6:00PM							

[Reset Courses](#) [Enroll Courses](#)

Step 4: Then the tab expands to all the Business courses where “BUS 201” will be selected.

**Course Search**

2012 FALL	▼
BUS - BUSINESS	▼
201	
5. D100 - GEMINO 10/50	
D200 - TINGLING 18/50	
D300 - TINGLING 50/50	
OP01 - 6/30	
OP02 - 4/30	
OP03 - 30/30	
OP04 - 30/30	
OP05 - 8/30	

**Schedule Preview**

Time	Monday Dec 3	Tuesday Dec 4	Wednesday Dec 5	Thursday Dec 6	Friday Dec 7	Saturday Dec 8	Sunday Dec 9
8:00AM							
9:00AM							
10:00AM							
11:00AM							
12:00PM							
1:00PM							
2:00PM							
3:00PM							
4:00PM							
5:00PM							
6:00PM							

[Reset Courses](#) [Enroll Courses](#)

Step 5: The next procedure involves selecting the section where a student can see the capacity and what fits into their schedule using the large interactive calendar.

Welcome, MATTHEW CHANG

### Course Search

2012 FALL ▾

BUS - BUSINESS ▾

201 ▾

D100 - GEMINO	● 10/50
D200 - TINGLING	● 18/50
D300 - TINGLING	● 50/50
OP01 -	● 6/30
OP02 -	● 4/30
OP03 -	▲ 30/30
OP04 -	● 30/30
OP05 -	● 8/30

### Schedule Preview

Time	Monday Dec 3	Tuesday Dec 4	Wednesday Dec 5	Thursday Dec 6	Friday Dec 7	Saturday Dec 8	Sunday Dec 9
8:00AM							
9:00AM							
10:00AM							
11:00AM							
12:00PM							
1:00PM							
2:00PM							
3:00PM							
4:00PM							
5:00PM							
6:00PM							

6.

[Reset Courses](#) [Enroll Courses](#)

Step 6: At last, once all the courses have been added and that there are no conflicts, then the student can enroll in all their courses by clicking on the “Enroll Courses” button.

FAVORITES | UNDERGRADUATE ADMISSION | UNDERGRADUATE ENROLLMENT | GRADUATE STUDIES | STUDENT ADVISING | FINANCES

#### Information + Overview

- [Admission](#)
- [Academics](#)
- [Personal Information](#)
- [Athletics + Recreation](#)
- [Finance Overview](#)

7. **WEEKLY SCHEDULE**

2012 Fall | Week 7 | Simon Fraser University

previous week WEEK 7 next week

more details

Time	Monday Dec 3	Tuesday Dec 4	Wednesday Dec 5	Thursday Dec 6	Friday Dec 7	Saturday Dec 8	Sunday Dec 9
8:00AM							
9:00AM							
10:00AM							
11:00AM							
12:00PM							
1:00PM							
2:00PM							
3:00PM							
4:00PM							
5:00PM							
6:00PM							

**EXAM SCHEDULE**

2012 Fall | Simon Fraser University

change term

Class	Description	Exam Type	Exam Date	Schedule	Location
BUS 201-D100 (6788)	Introduction to Business (Lecture)	Final	2012/12/10	8:30AM – 11:30AM	SUR5280

#### NOTIFICATION

! Last day for **course registration** is January 10th, 2012

▲ Last day for **tuition fee** without any penalty is January 22th, 2012

#### HELP

[Enrollment Process](#)  
[Student Information System](#)  
[Academic Advising](#)

Step 7: After enrolling, the system will automatically bring the student back to the main page showing the courses they have enrolled in.

# CHAPTER 3

## PROTOTYPING

### 2. REFLECTION: INSIGHTS & LESSONS LEARNED

#### 2.1 Insights from User Testing, Feedback, & Discussion

SFU and other university enrollment systems provide services and tools to assist students in creating their term schedules. User testing of the current SIS revealed many heuristic violations such as poor visibility and consistency throughout the interface. Also, there were usability issues stated by users such as redundancy. Users thought that there were too many steps required to enroll in courses. Furthermore, the interface lacked functionalities such as back button for flexible navigation. To enhance usability, our prototypes have redesigned the interface, which incorporates more visual elements such as schedule preview to increase visibility, feedback and removes steps for efficient process by providing tools that students need on a single page. Our prototype A has more consistency since it follows SFU main website layout; Our prototype B has visual hierarchy, which was lacking in the original interface. Based on our user study, we tried to improve the issues in current system.

Word count: 150 of [75-150 words allowed]

#### 2.2 Insights from Prototyping

The significant role that prototyping played for the group is that it helped us test and organize our ideas in the form of an interactive medium. During the brainstorming session, we had various ideas for improving certain features of the current SIS interface. With the creation of two prototypes, they allowed us to develop a comprehensible form to visualize our ideas. Afterwards, we were able to evaluate the features that could be improved further through team discussion of the working and non-working ideas. Furthermore, by interacting with the prototypes, we were able to notice concerns and problems that were not identified during our brainstorming session, which as been quickly implemented to solve the issues raised. With prototypes to represent our design thinking, the team was able to measure effectiveness of our solution according to the problems addressed during user testing where the ideas has been reviewed based on user requirement.

Word count: 150 of [75- 150 words allowed]

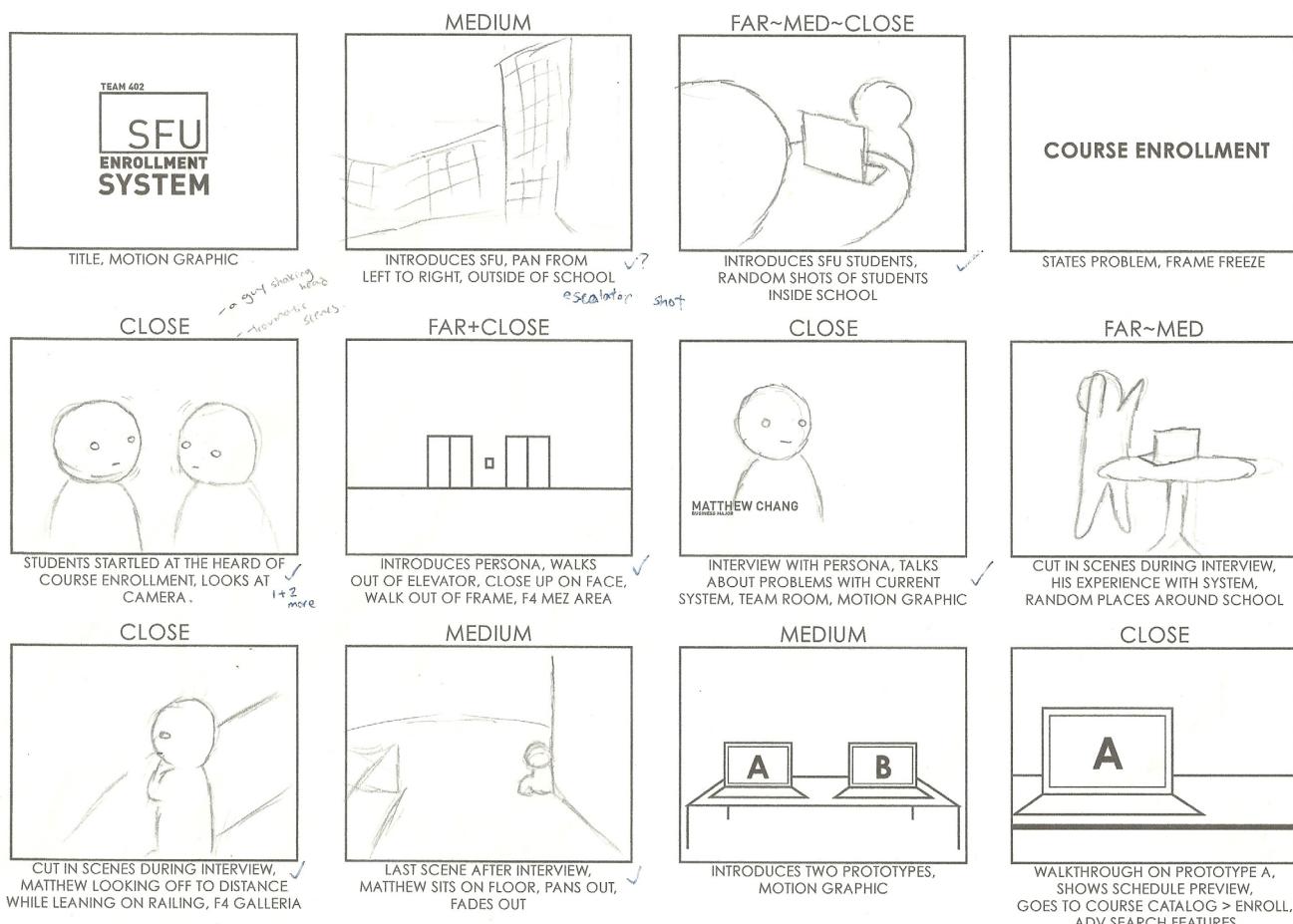
# CHAPTER 3

## PROTOTYPING

### 3. STORYBOARD FOR PROJECT VIDEO

IAT 201 SFU ENROLLMENT SYSTEM FINAL VIDEO STORYBOARD

PAGE 1



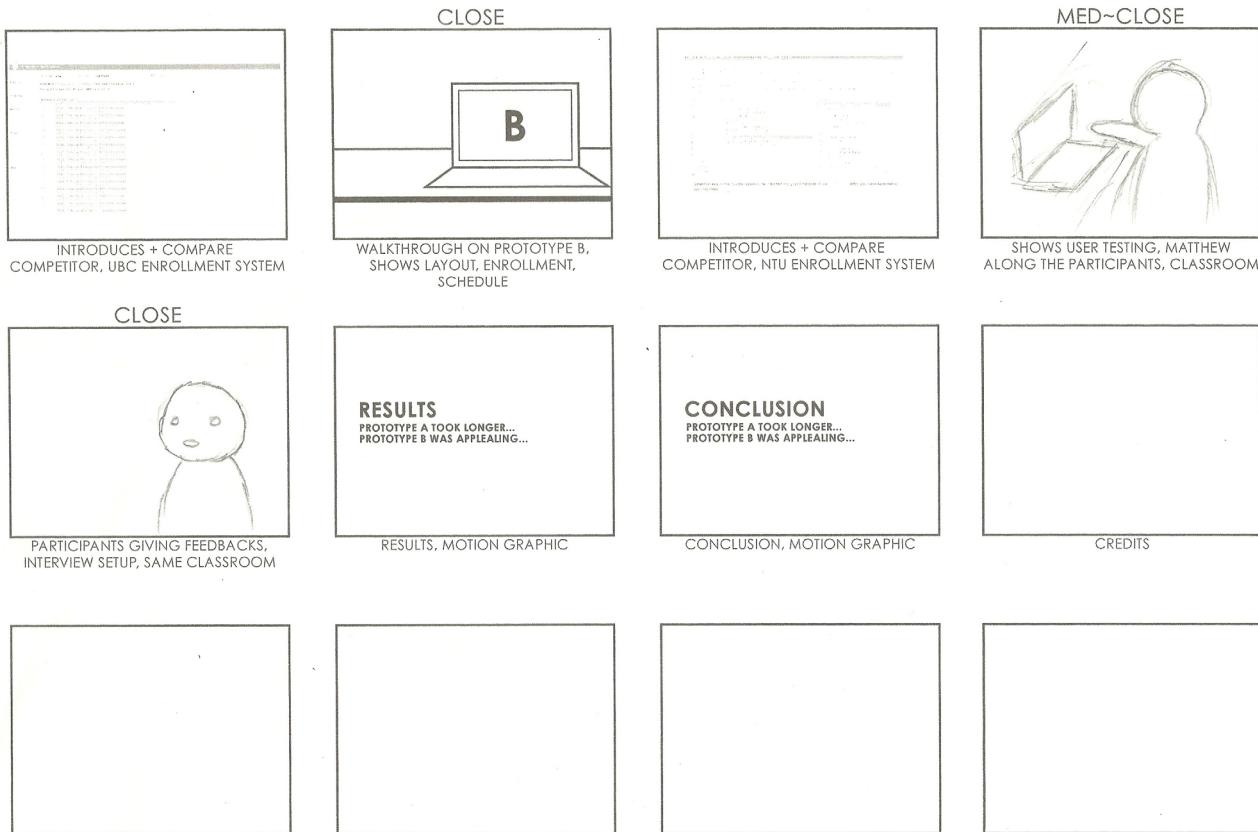
# CHAPTER 3

## PROTOTYPING

### 3. STORYBOARD FOR PROJECT VIDEO

IAT 201 SFU ENROLLMENT SYSTEM FINAL VIDEO STORYBOARD

PAGE 2



# CHAPTER 3

## PROTOTYPING

### 4. PROJECT VIDEO

Link to project video: <https://vimeo.com/54535641>





# **CHAPTER 4**

## **EVALUATION**

**ID 4 REPORT**

TEAM LEADER . JUN PENG

# CHAPTER 4

## EVALUATION

### 1. GOALS OF THIS EVALUATION STUDY

#### **Big Picture**

When students use the SFU SIS enrollment system, they hope to enroll in their preferred courses as quickly and efficiently as possible. However, there are too many constrained steps for the process, causing difficulty in viewing conflicts. After deriving goals based on testing of the old system, the team has produced two redesigns.

This leads to a study in usability testing to evaluate which improved prototype provides higher efficiency in course registration using a shorter and quicker enrollment process. Participants are asked to enroll in Business 201 where data will be noted for revision.

Hence, the evaluation follows these guidelines:

- Understand which prototype provides more efficient course strategization
- Test which interface allows simpler navigation, such as search functions
- Evaluate which version is faster to perform the given task
- Obtain quantitative and qualitative data to know which system has a higher preference

Word count: 145 of [50 – 150 words allowed]

# CHAPTER 4

## EVALUATION

### 1. GOALS OF THIS EVALUATION STUDY

#### 1.1 Questions and Hypothesis Addressed by the Evaluation

##### **Question 1: Which prototype provides a better visualization of course scheduling?**

- Hypothesis 1 (A + B) = If we ask a student to enroll in multiple Business courses, then they will use the visible timetable to preview and organize their courses without the need to write them down on a separate medium before clicking on the “enroll” button.
- Hypothesis 2 (A + B) = If we put a schedule preview, then it reduces cognitive load on students by affording them to view their schedule and make changes quickly to prevent errors.

##### **Question 2: Does the participant know where to begin course search to enroll in classes?**

- Hypothesis 3 (A) = If we place the “course catalog” and “advance search” button on the main page next to the student’s current course calendar, then they will use it at their advantage.
- Hypothesis 4 (B) = If we make options visible and minimal, then users will be able to navigate through the site quicker to enroll in all their courses.

##### **Question 3: Can users perform their given task of enrolling in Business 201 faster than the average time of the current system?**

- Hypothesis 5 (A) = If we implement a course catalog search function, then an individual will be able to find BUS 201 faster.
- Hypothesis 6 (A + B) = If we constrain course enrollment on one page, then a user can finish adding all their courses and preview before selecting the “enroll” button.
- Hypothesis 7 (A) = If we provide a filter search, then students will fill in all relevant information before clicking on the “search” button.
- Hypothesis 8 (A + B) = If we change the searching structure by categorizing course selection, then it reduces the amount of time of class search.

Word count: 279 of [100 – 300 words allowed]

# CHAPTER 4

## EVALUATION

### 2. DESIGN EVALUATION METHODS

#### 2.1 Participants (Who are you testing?)

##### **Informed consent? Ethics approval?**

Participants were mainly recruited from SFU Campuses since our interface targets the audience of students who uses the SFU Student Information System, especially for course registration and maintaining their course schedule. Furthermore, users ranged from a prospective student as a first time user, several second years to relate to our persona, as well as senior students who are advance users, all studying different majors to yield a difference in the result. The reason for multiple age groups is that each individual have a certain amount of experience with the original system where the team wanted to view how their experience in course enrollment will affect their performance on the improved interfaces. In order to recruit participants, it was through phone calls, e-mails, Facebook and asking directly where a quick interview was conducted to make sure the students were not taking IAT 201 to prevent unconscious bias.

The study took place within the school in a team room at the SFU Surrey Campus where each session durated around fifteen minutes to half an hour. During usability testing, participants were given two prototypes (A and B) to try where they were asked to speak aloud in order to understand their thought process, as well as a follow-up questionnaire after completing their task. Below, it shows a list of users involved.

# CHAPTER 4

## EVALUATION

### 2. DESIGN EVALUATION METHODS

#### 2.1 Participants (Who are you testing?)

##### **Group 1 (Prototype A then B)**

User 2  
age: 20  
major: SIAT  
school year: 3rd  
experience using SFU SIS: Yes, moderate.

User 4  
age: 19  
major: undecided  
school year: 2nd  
experience using SFU SIS: Yes, moderate.

User 6  
age: 17  
major: n/a  
school year: prospective SFU student  
experience using SFU SIS: No, inexperienced.

User 8  
age: 19  
major: Health Science  
school year: 1st  
experience using SFU SIS: No, inexperienced.

##### **Group 2 (Prototype B then A)**

User 1  
age: 22  
major: SIAT  
school year: 3rd  
experience using SFU SIS: Yes, moderate.

User 3  
age: 20  
major: SIAT  
school year: 3rd  
experience using SFU SIS: Yes, moderate.

User 5  
age: 23  
major: Business  
school year: 5th  
experience using SFU SIS: Yes, experienced.

User 7  
age: 20  
major: Health Science  
school year: 2nd  
experience using SFU SIS: Yes, moderate.

# CHAPTER 4

## EVALUATION

### 2. DESIGN EVALUATION METHODS

#### 2.2 Materials: What evaluation approach and methods did you chose and why?

For the evaluation approach, usability testing was used since we were focusing on improving the task of course enrollment which is a more relevant method to the team's design goals and the purpose of redesigning an existing interface. This approach allows us to quantify user's performance and observe user's behavior while they interact with the interface. Furthermore, it also helps us measure any errors that we did not discover during internal testing. The study was executed at the SFU Surrey Campus, which is a site where we can find our target users.

Our main data collection tools consist of the following:

- One laptop which as Prototype A and B set up for participants to test
- A different laptop with a set of questionnaires and surveys to obtain background information about the participants, quantitative feedback, as well as qualitative feedback about the two prototypes
- A timer to calculate how fast the user can complete their given task in enrolling in the lecture of Business 201 for quantitative analysis
- A microphone to record the students' thought process as they speak aloud for qualitative analysis

A brief outline of the testing session takes place as the following:

1. Facilitator explains about research and what participant needs to do
2. Facilitator asks for permission by asking the participant to sign the permission form
3. Facilitator asks user to speak out loud their actions (microphone recording)
4. User performs the task of enrolling in BUS 201 course using digital prototype A and B.
5. Facilitator records the time it took to complete the task using Prototype A and B. Other five team members writes about user's behavior on their observation notes.
6. User is asked to fill out set of questionnaires about prototype A and B.

Our data collection tools allowed us to collect quantitative (timing user for their enrollment process) and qualitative data (understanding their behaviors) to measure the efficiency and effectiveness of our prototypes. In our questionnaires, there are questions that asks users to evaluate the effectiveness and efficiency of interface functionalities based on a quantitative scale (out of 10) and qualitative scale (experience description).

# CHAPTER 4

## EVALUATION

### 2. DESIGN EVALUATION METHODS

#### 2.2 Materials: What evaluation approach and methods did you chose and why?

##### 2.2.1 Instructions to participants and task description

1. Invited participants
2. Facilitator introduced self, the team, objective and procedure of the experiment
3. Then the facilitator let the users know that they will be timed during the process
4. Following that, the facilitator asked the subjects if they can think aloud and if we have permission to record their thought process on a microphone where the data collected will not be released to public, only for the team's information gathering.
5. Before starting the experiment, the facilitator let the students know that they can feel free to ask questions if there are confused
6. Consent form is then given after explanation for participants to read through and sign
7. To begin, the facilitator told the users about their task to enroll in BUS 201 in the Fall 2012 term in section D100
8. Prototype A then B or B then A are shown for usability testing on the laptop
9. Facilitator provided prompts if necessary
10. The rest of the team noted down observations and timing user
11. After testing, the facilitator provided questionnaires to answer on the laptop
12. Thanked the participants

# CHAPTER 4

## EVALUATION

### 2. DESIGN EVALUATION METHODS

#### 2.2 Materials: What evaluation approach and methods did you chose and why?

##### 2.2.2 Observation table

###### Prototype A

Observation Table (Prototype A)	User 1	User 2	User 3	User 4	User 5	User 6	User 7	User 8
1. Enrollment Page and Process								
2. Main page layout								
3. Finishing Enrollment								
4. Preview Calendar								
Others (Prompts, any other behavior)	(note any frustration or questions that user had that does not fit under the categories above)							

###### Prototype B

Observation Table (Prototype A)	User 1	User 2	User 3	User 4	User 5	User 6	User 7	User 8
1. Enrollment Page and Process								
2. Main page layout								
3. Finishing Enrollment								
4. Preview Calendar								
Others (Prompts, any other behavior)	(note any frustration or questions that user had that does not fit under the categories above)							

# CHAPTER 4

## EVALUATION

### 2. DESIGN EVALUATION METHODS

#### 2.2 Materials: What evaluation approach and methods did you chose and why?

##### 2.2.3 Questionnaire

###### User Testing Questionnaire

1. What Year and Major are you in? What are the courses you are taking at SFU this fall term, how many are required courses, WQB courses, optional/electives inside and outside your area of study?
2. Were you able to get all the courses you wanted this term (exclude courses that did not have the pre- or co-requisite?)
3. If you were unable to register in any REQUIRED courses you wanted this fall term, what level were the courses? Does it have pre- or co-requisites?
4. If you were planning on completing your degree/credential this term Fall 2012, did you encounter any of these problems (course availability, scheduling conflicts)?
5. When you first began your degree/credential at SFU, how long did you EXPECT to complete your studies and how long is it actually taking? How important did you think it was to complete your degree/credential within that time frame?
6. How SATISFIED were you with COURSE AVAILABILITY at SFU this term? rank out of 10.
7. How SATISFIED are you with your overall SFU experience with course availability? rank out of 10.

# CHAPTER 4

## EVALUATION

### 2. DESIGN EVALUATION METHODS

#### 2.2 Materials: What evaluation approach and methods did you chose and why?

##### 2.2.3 Questionnaire

###### Prototype A

1. Describe your experience with SFU SIS system.
2. What aspect(s) of the interface did you like? List reasons and why.
3. What aspect(s) of the interface did you not like? List reasons and why.
4. Did you see the information that you need on the main page after the login?
5. Did the calendar help you completing the task? How?
6. How helpful is the calendar? Rate from 1 (not really) to 10 (very helpful).
7. Did you experience any confusion with the interface?
8. How did you feel about the enrolment process and number of steps you went through?
9. Is it easier to schedule courses you were looking for and compare courses? Please rate from 1(not really) to 10(very helpful).
10. Did you see which button to click to get to the course enrolment?
11. How important the notification is for you? Rate from 1(not really) to 10(very helpful).
12. Is the interface easy to use? Please rate from 1(not really) to 10(very helpful).

###### Prototype B

1. Describe your experience with SFU SIS system.
2. What aspect(s) of the interface did you like? List reasons and why.
3. What aspect(s) of the interface did you not like? List reasons and why.
4. Did you see the information that you need on the main page after the login?
5. Did the calendar help you completing the task? How?
6. How helpful is the calendar? Rate from 1 (not really) to 10 (very helpful).
7. Did you experience any confusion with the interface?
8. How did you feel about the enrolment process and number of steps you went through?
9. Is it easier to schedule courses you were looking for and compare courses? Please rate from 1(not really) to 10(very helpful).
10. Did you see which button to click to get to the course enrolment?
11. How important the notification is for you? Rate from 1(not really) to 10(very helpful).
12. Is the interface easy to use? Please rate from 1(not really) to 10(very helpful).

# CHAPTER 4

## EVALUATION

### 2. DESIGN EVALUATION METHODS

#### 2.3 Experimental design & Procedure

- TESTED prototype A to B (user 2, 4, 6, 8)
- TESTED prototype B to A (user 1, 3, 5, 7)

#### Evaluation Procedure Overview

Below is a chart that represents the two user testing sessions conducted which we first started with an introduction when the user enters, then provided them a consent form, followed by instructions on the tasks they need the accomplish.

	User Group A (at least 3 participants)	User Group B (at least 3 different participants)
	Test Prototype 1	Test Prototype 2
	Users were asked to enroll in Bus 201 course using Prototype A first.	Users were asked to enroll in Bus 201 course using Prototype B first.
	With the permission from the user, facilitator did the audio recording of user speaking out loud about their thoughts.	With the permission from the user, facilitator did the audio recording of user speaking out loud about their thoughts.
Test Session 1	During the testing, facilitator timed the participants and prompted questions that participant asked.  Rest of the team members took notes of time it takes to complete the task and details about what user does and level of prompts that are used.	During the testing, facilitator timed the participants and prompted questions that participant asked.  Rest of the team members took notes of time it takes to complete the task and details about what user does and level of prompts that are used.
	After brief moments, user proceed to the 2nd part of the test.	After brief moments, user proceed to the 2nd part of the test.

# CHAPTER 4

## EVALUATION

### 2. DESIGN EVALUATION METHODS

#### 2.3 Experimental design & Procedure

(continued)

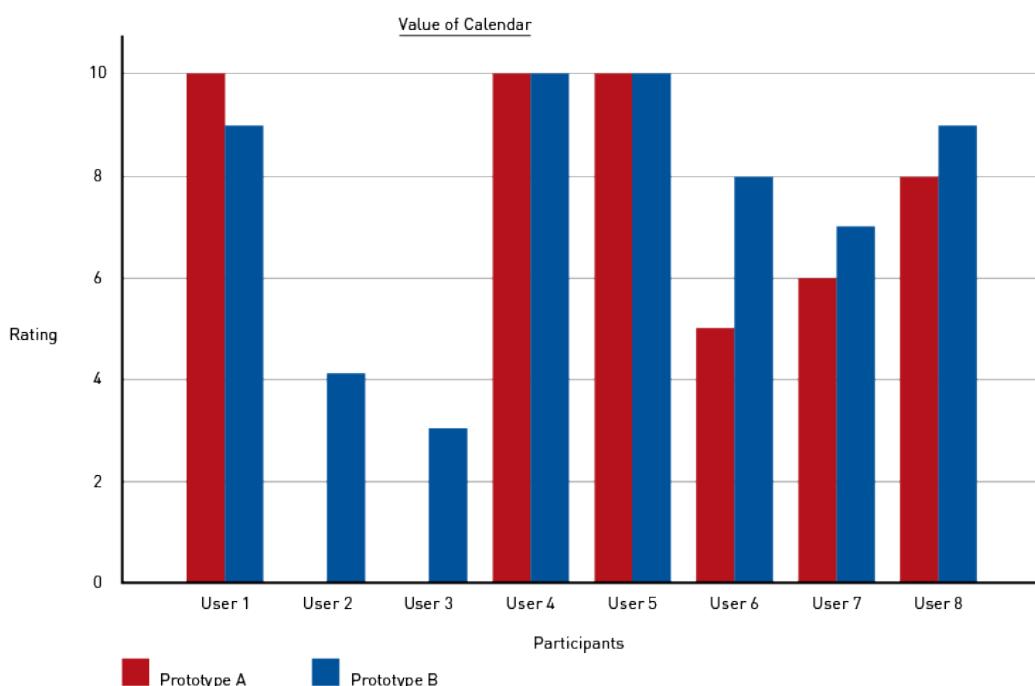
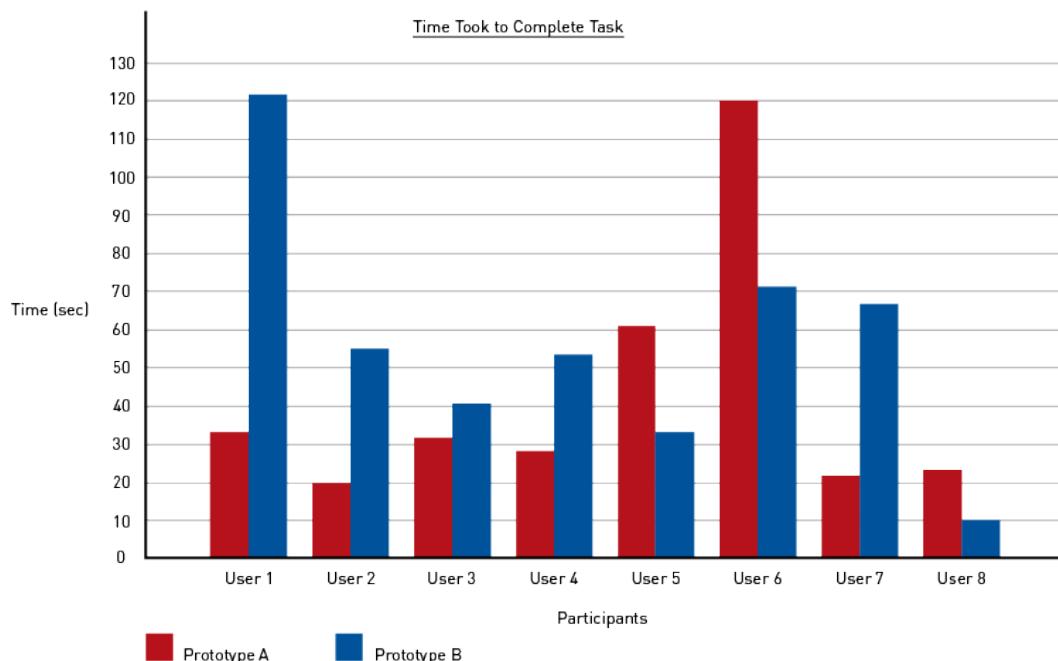
	User Group A (at least 3 participants)	User Group B (at least 3 different participants)
e.g., Final Comparative questionnaire, debriefing and other post-experimental activities	Test Prototype 2	Test Prototype 1
	Users were asked to enroll in Bus 201 course using Prototype B.	Users were asked to enroll in Bus 201 course using Prototype A..
	With the permission from the user, facilitator did the audio recording of user speaking out loud.	With the permission from the user, facilitator did the audio recording of user speaking out loud.
	During the testing, facilitator timed the participants and prompted questions that they asked.	During the testing, facilitator timed the participants and prompted questions that they asked.
	Rest of the team members took notes of time it takes to complete the task and details about what user does and level of prompts that are used.	Rest of the team members took notes of time it takes to complete the task and details about what user does and level of prompts that are used.
	After brief moments, user proceed to the 3rd part of the test.	After brief moments, user proceed to the 3rd part of the test.
	After both prototypes has been tested, User were given questionnaires to answer.	After both prototypes has been tested, User were given questionnaires to answer.
	First set of questions are screeners to help us analyze the value of user's answers. We wanted to know which year of school they are in and how experienced they are with the current SFU SIS. Second set of questionnaires are about Prototype A and B.	First set of questions are screeners to help us analyze the value of user's answers. We wanted to know which year of school they are in and how experienced they are with the current SFU SIS. Second set of questionnaires are about Prototype A and B.

# CHAPTER 4

## EVALUATION

### 3.RESULTS

#### 3.1 Quantitative data

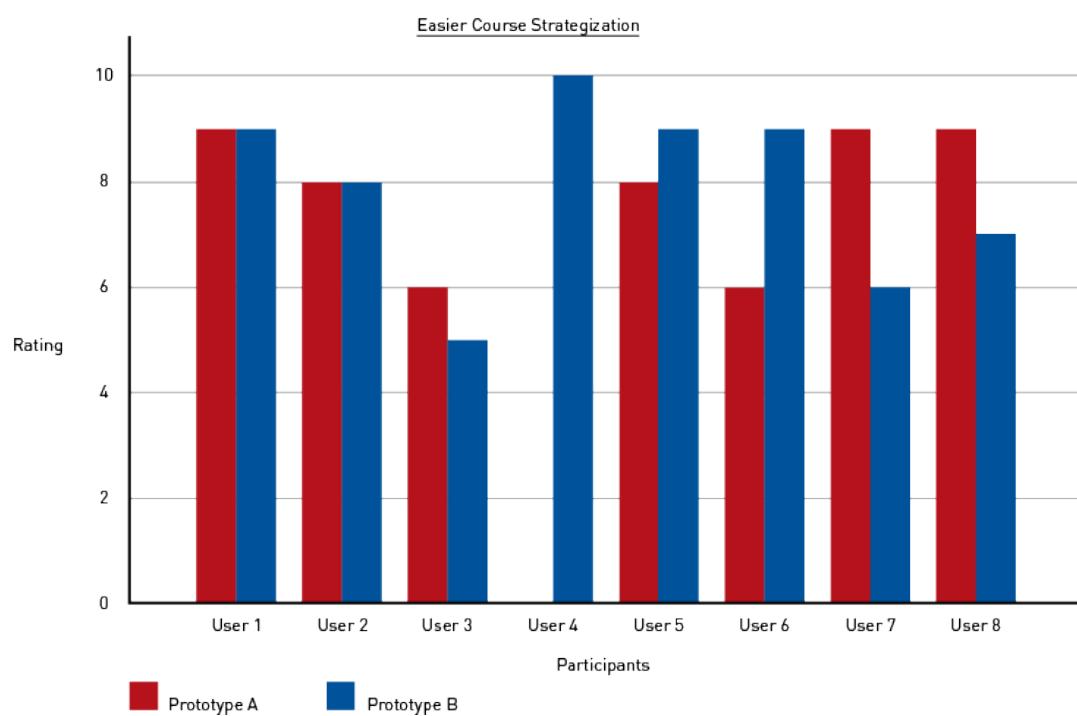
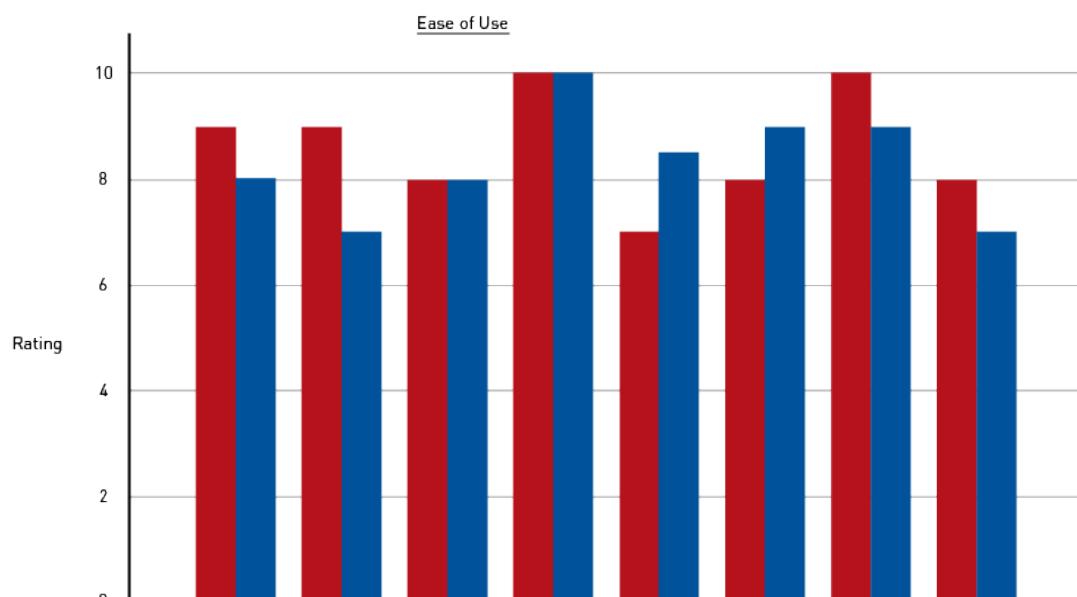


# CHAPTER 4

## EVALUATION

### 3.RESULTS

#### 3.1 Quantitative data



# CHAPTER 4

## EVALUATION

### 3.RESULTS

#### 3.2 Qualitative data

##### BIG PICTURE

###### **Feedback from testing prototype A**

- too many options (course catalog and advanced search for course enrollment)
- the names, course catalog and advanced search, does not clearly indicate that it is for course enrollment
- user 5 and 6 found it's aesthetic boring and too traditional, however they thought it was consistent with main SFU website.

###### **Feedback from testing prototype B**

- Interface was more simple than B
- Was easier to visualize course schedule than A
- The “enrollment” button on the main page was difficult to find
- Easy and simple navigation
- Users felt uncomfortable with the horizontal buttons on the top

###### **Comparison between prototype A and B**

- B has better aesthetics than A because it was simple and clean
- Schedule preview in A was less obvious than B, although the emphasis on the calendar was different, users found that having a preview calendar is highly efficient and helpful
- A has more functions and options to search for courses than B
- B has more detailed description of courses than A, which mainly shows course availability and number of seats left.
- Enrollment button was ambiguous on both prototypes but in comparison, button was found easier on A, then B.

# CHAPTER 4

## EVALUATION

### 3.RESULTS

#### 3.2 Qualitative data

##### Prototype A

Observation Table	User 1	User 2	User 3	User 4
1. Enrollment Page and Process	Used course Catalog not using advanced Search	Did not click detail button	Did not click detail button	Used course catalog Confused after clicking enroll button b/c thought that there was a confirmation page after clicking enroll
2. Main page layout	Cannot find the enroll button easily	Tries out course catalog menu	Tries out course catalog menu	Felt that it was well organized and categorized
3. Finishing Enrollment	Not clicking detail button for more info	n/a	No trouble with it	No trouble with it
4. Preview Calendar	Helps to add course w/o conflict	Said that it was not needed	Did not notice	Helpful but better if there is time indication
Others (Prompts, any other behavior)				

# CHAPTER 4

## EVALUATION

### 3.RESULTS

#### 3.2 Qualitative data

##### Prototype A

Observation Table	User 5	User 6	User 7	User 8
1. Enrollment Page and Process	Used course catalog navigated easily overall	Used course catalog - however, user did not think that it is for enrollment, so randomly clicked menu. Then, ends up in advance search	Used course catalog Clicked detail button	Used course catalog
2. Main page layout	Used course catalog button instead of left menu one	Confused about the terms and purpose (advanced search, course catalog)	Did not like naming conventions (rather have Add Class)	
3. Finishing Enrollment	No trouble with it	After figuring out how to use search options, no trouble with the process	Confused about finish enrollment	Confused about finish enrollment
4. Preview Calendar	Felt that it was useful	Dislike no time indication	Did not notice	Noticed it but too small
Others (Prompts, any other behavior)	n/a	She pointed out that aesthetic was boring and dull	n/a	n/a

# CHAPTER 4

## EVALUATION

### 3.RESULTS

#### 3.2 Qualitative data

##### Prototype B

Observation Table	User 1	User 2	User 3	User 4
1. Enrollment Page and Process	Cannot find the enrollment session (spending most of the time to find this)	Find enrollment session really fast and navigated well with little difficulty	Confused because of the lack of feedback on the confirmation screen	Easy and quick navigation
2. Main page layout	Try to click everywhere on the interface (confused about layout of the interface)and Enrollment button, so needed hint (little frustration)	Felt that interface looks similar to other SFU website  Try to click the schedule but nothing show up	Having top menu and side menu made it hard to comprehend	Having problem finding the enrollment session and Confused about the interface design
3. Finishing Enrollment	Confused about whether she is done enrollment or not		Confirmation screen was unclear so little bit confused	
4. Preview Calendar	Helpful in fitting the courses	Shows time but not really needed	Did not notice	Easy to see time confliction
Others (Prompts, any other behavior)		Good number of steps		

# CHAPTER 4

## EVALUATION

### 3.RESULTS

#### 3.2 Qualitative data

##### Prototype B

Observation Table	User 5	User 6	User 7	User 8
1. Enrollment Page and Process	Fast navigation with no trouble finding the course	Fast process after finding undergraduate enrollment button	Could not find enrollment button right away	Found enrollment button right away
2. Main page layout	Hovered mouse around little bit but found the button soon	Undergraduate admission clicked first  User needed Prompt 1 hint to find the undergraduate enrollment button	Did not like the top bars (similarity and proximity too high)  Blue button was hard to see	No comment
3. Finishing Enrollment	No confusion		Felt that buttons was not visible enough	Stumble a bit to find the enroll button
4. Preview Calendar	Thought it was helpful	Thought it was helpful and useful	Enough visibility	Like the size
Others (Prompts, any other behavior)		Clear sign of frustration with the main page layout	Need hint to look at the top to find the undergraduate enrollment button	Need hint to find the undergraduate enrollment button

# CHAPTER 4

## EVALUATION

### 4. DISCUSSION AND CONCLUSIONS - IMPLICATIONS FOR FUTURE INTERACTION DESIGN

Over the course of several user testing sessions that were conducted, the design team managed to obtain extensive amount of qualitative and quantitative data that were useful in analyzing the effectiveness and the efficiency of our two redesigned SFU Student Information System prototypes. Analysis were based from the responses of eight participants derived from a diverse range of backgrounds so as to accurately represent the feedback from all our intended user groups. In verifying and validating our prototypes against our design hypothesis, the team found out that there were some similarities which resonate well with our users. Listed below are the major hypotheses that were tested and validated against our user findings.

#### **Prototype A & B**

If we introduce an interactive calendar, then it reduces the cognitive load on students during course registration and allow them to make changes rapidly.

- Many participants tested on both prototypes A and B were extremely receptive with having a course preview displayed on the user interface. In the surveys conducted, users gave high ratings on the helpfulness in having a schedule calendar on both the prototypes.
- Incorporating a visualized view of the course layout in the form of a weekly calendar assist with course strategizing to prevent time conflicts in courses.
- User preference seems to gravitate towards the use of a larger calendar that was present in prototype B as compared to prototype A.
- In addition, there were considerable reduction in time spent on making course registration with the implementation of the schedule.

# CHAPTER 4

## EVALUATION

### 4. DISCUSSION AND CONCLUSIONS - IMPLICATIONS FOR FUTURE INTERACTION DESIGN

#### Prototype A

If we put a visible menu on the left side of the screen instead of hidden drop-down menus, then users will have quick access to the menu to view other sections of the system to perform tasks.

#### Prototype B

If we change the search structure by categorizing course selection using tabs rather than drop-down menus, then it reduces the amount of time students need to read through the list of available options and be able to make a faster selection.

- Many users felt that the amount of steps were reduced during the new enrollment process with the increased in visibility and intuitiveness of how the menu options are now being categorized.
- This is in line with what is proposed by Hick's law, where the amount of time to make decisions can be considerably reduced if we were to categorized similar functions into one single list instead of having all of them in two or more list of options.

#### Prototype A

If we integrate the overall web layout of the university's main page onto SIS, then students will be able to find the enrollment page much quicker due to familiarity with the functionality of the SFU main website.

#### Prototype B

If we simplify the interface by categorizing relevant interface options, then users can quickly navigate through the site by accessing their interests in relation to each category.

- In terms of UI aesthetics and the overall functionalities of the prototypes, veteran users seems to prefer prototype A for its functionality. However, when the same test were conducted on new users, the preference for prototype B is higher
- While the findings were non conclusive, it suggests that veteran users might either be too entrenched in the current system to transition to a totally new system (i.e. prototype B) or the fact that prototype A bears a higher resemblance to the current system when compared to prototype B
- In conducting the test, the team realize that there is an important need to cater to both the current users as well as new users. A full transition into a novel interface would likely result in failure

# CHAPTER 4

## EVALUATION

### 4. DISCUSSION AND CONCLUSIONS - IMPLICATIONS FOR FUTURE INTERACTION DESIGN

#### **Design paradigm & Design metaphors**

- All of the users were unanimous in their preference of prototype B in the use of appropriate design metaphors. Users found that organizing similar options in an organizer-styled fashion improves the intuitiveness of the interface and improves the learnability and memorability of the prototype

While there were some issues that lead users to be confused about what they were interacting with during the test, the main issues seems to be the naming convention of options such as course catalog and advance search. For both of the prototypes, users felt that there was a lacked in the confirmation step right before submitting the course for enrollment. In the prototype, we made it so that when user were to click the enroll button, it would lead them to the main page. However, there was a lack of feedback that course enrollment has been processed and finished which seems to cause a lot of confusion amongst all the users.

Future iterations of the prototypes would incorporate features such as search menus and enrollment button so as to have a clearer indication of it's functionality. In addition, we would likely incorporate the strengths of both the prototypes as listed above so as to provide a more compelling experience during course enrollment.

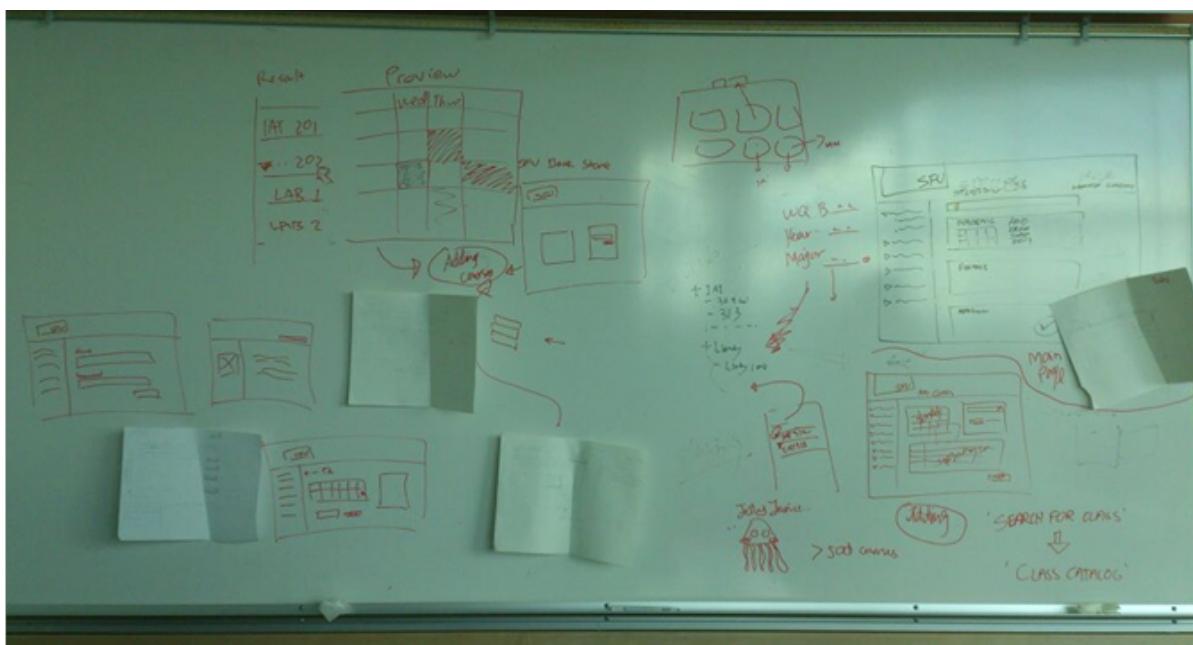


# APPENDIX

## DESIGN PROCESS ILLUSTRATION AND LIST OF CHANGES

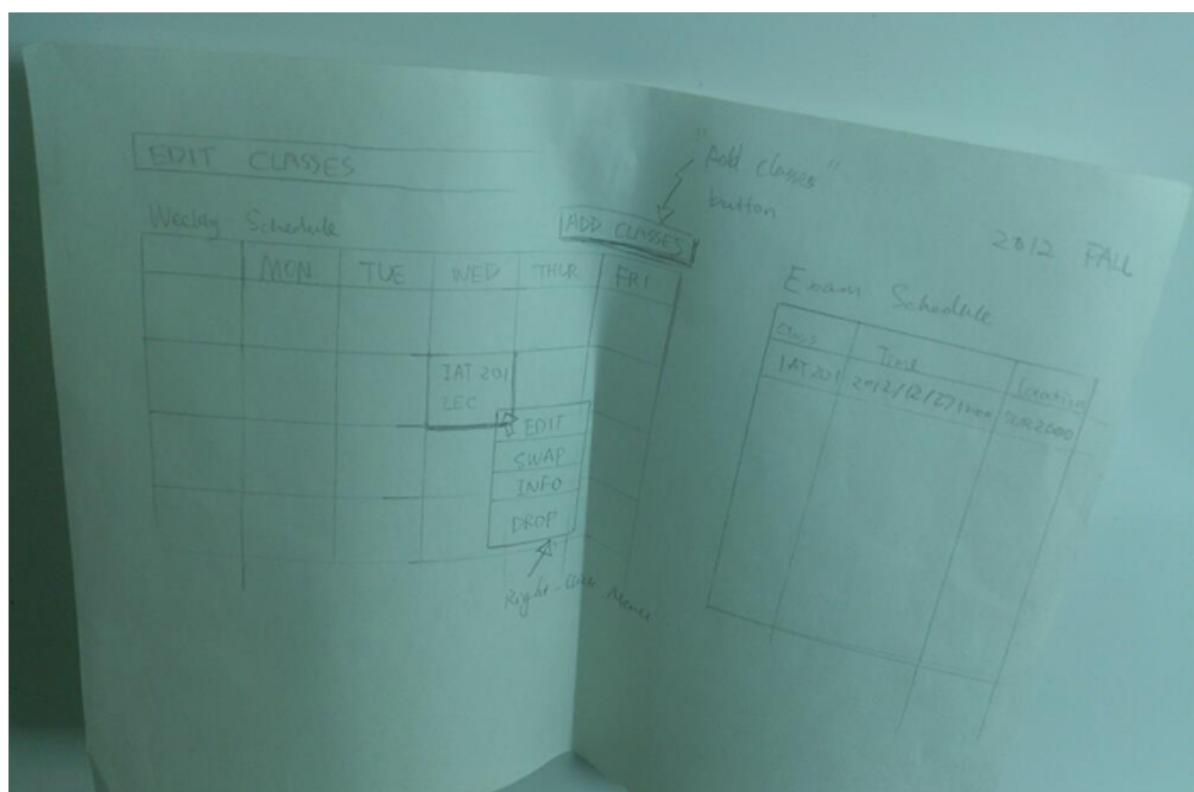
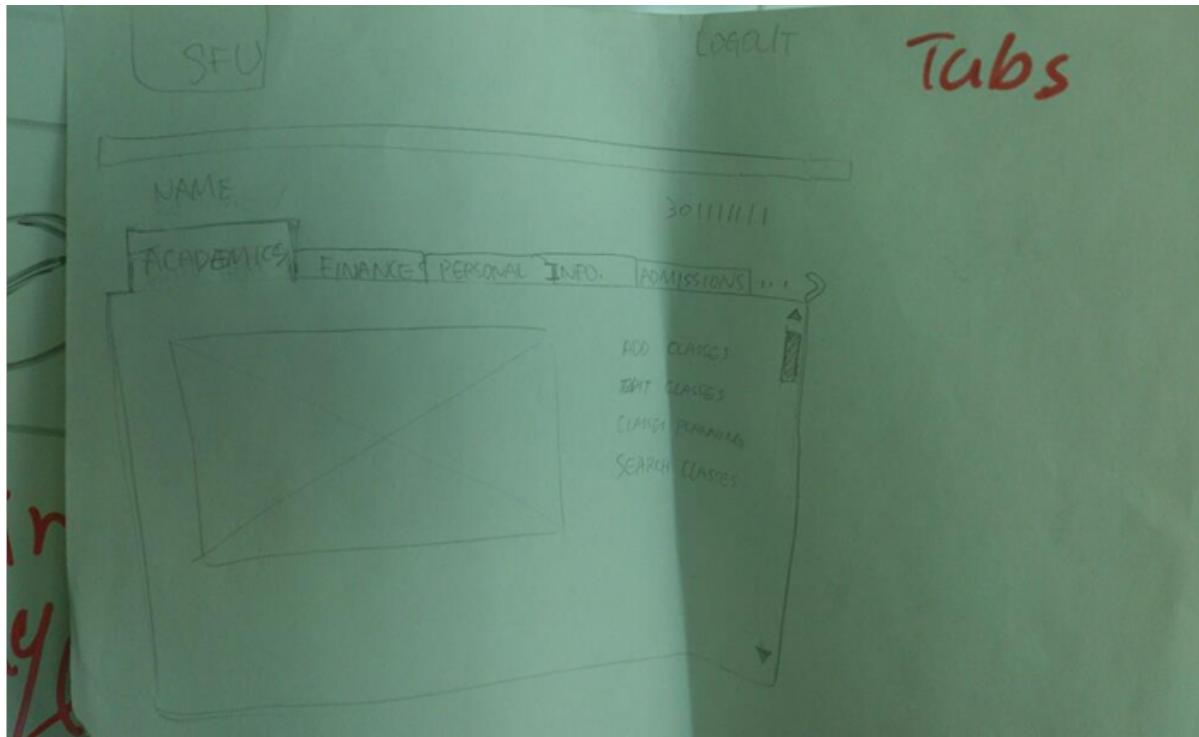
# APPENDIX

## DESIGN PROCESS ILLUSTRATION



# APPENDIX

## DESIGN PROCESS ILLUSTRATION



# APPENDIX

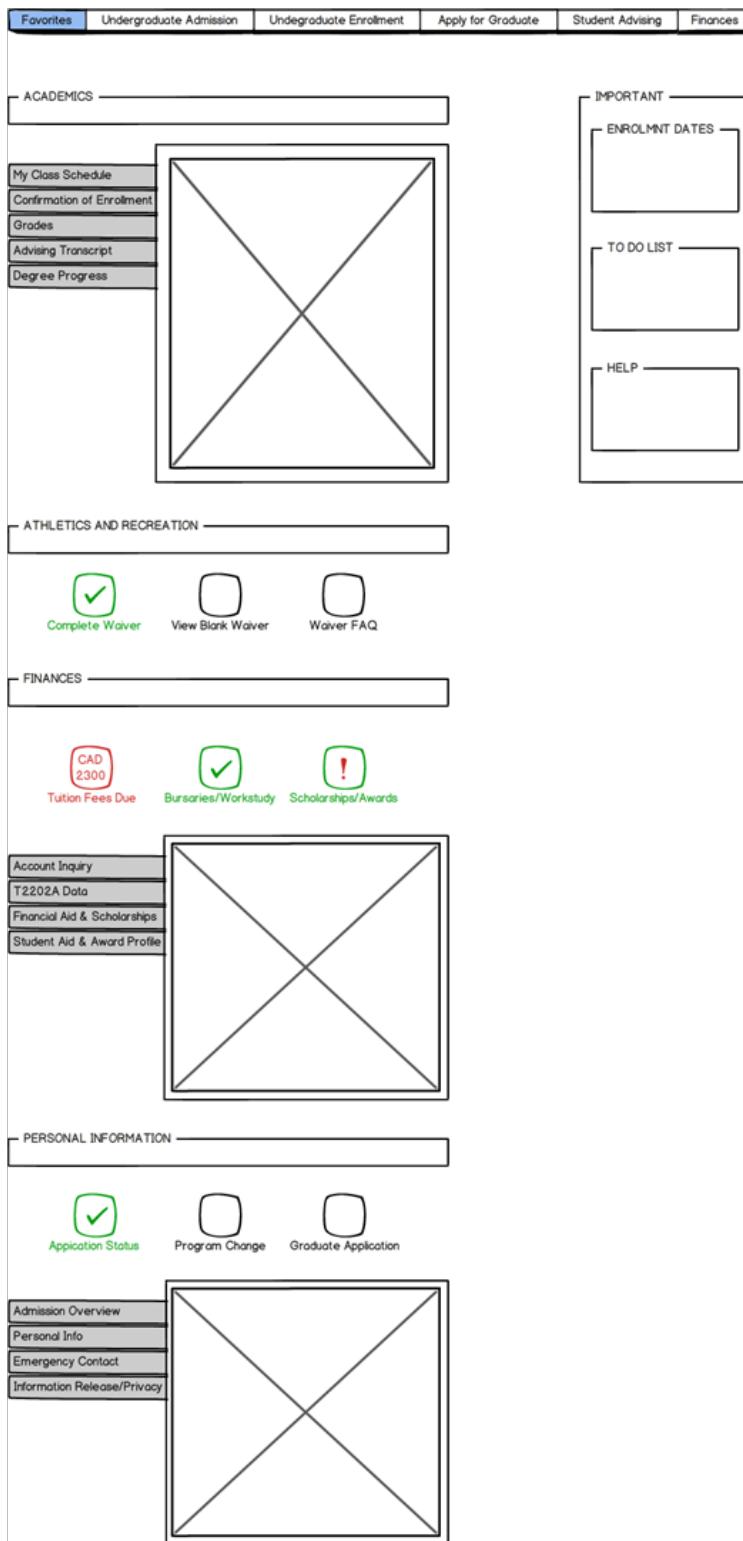
## DESIGN PROCESS ILLUSTRATION

The screenshot shows the SFU Student Information System Enrollment page. The top navigation bar includes the SFU logo, a search bar labeled "Search for Classes", and a dropdown menu for "ENROLLMENT". Below this, there's a sidebar with links for "Course Strategizing" (Browse for Classes, WQB Courses, Advanced Search), "My Schedule", and "WQB". The main content area displays a list of courses under the heading "IAT 103W - DESIGN COMMUNICATION AND COLLABORATION". Other visible course titles include "IAT 106 - SPATIAL DESIGN AND COMMUNICATING", "IAT 201 - HUMAN-COMPUTER INTERACTION AND COGNITION", "IAT 202 - MOVING IMAGES", "IAT 222 - INTERACTIVE ARTS", "IAT 233 - SPATIAL DESIGN", and "IAT 236 - INFORMATION DESIGN". To the right of the course list are filters for "Major" (Interactive Art and Tech), "Year" (First Year), "WQB" (Higher Writing), "Location" (Surrey), and "Term" (2012 Fall). A legend at the bottom indicates days of the week: Mon Tue Wed Thu Fri Sat Sun.

The screenshot shows the SFU Student Information System Enrollment page. The top navigation bar includes the SFU logo, a search bar labeled "Search for Classes", and a dropdown menu for "ENROLLMENT". Below this, there's a sidebar with links for "Course Strategizing" (Browse for Classes, WQB Courses, Advanced Search), "My Schedule", and "WQB". The main content area displays a weekly course schedule grid titled "COURSE STRATEGIZING". The columns represent the days of the week: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday. The first column has a "Time" header. A specific cell in the Wednesday column contains handwritten notes: "IAT 203 - 1001", "IAT 203 - 1002", "IAT 203 - 1003", and "IAT 203 - 1004". To the right of the schedule grid are filters for "Major" (Interactive Art and Tech), "Year" (First Year), "WQB" (Higher Writing), "Location" (Surrey), and "Term" (2012 Fall). A legend at the bottom indicates days of the week: Mon Tue Wed Thu Fri Sat Sun.

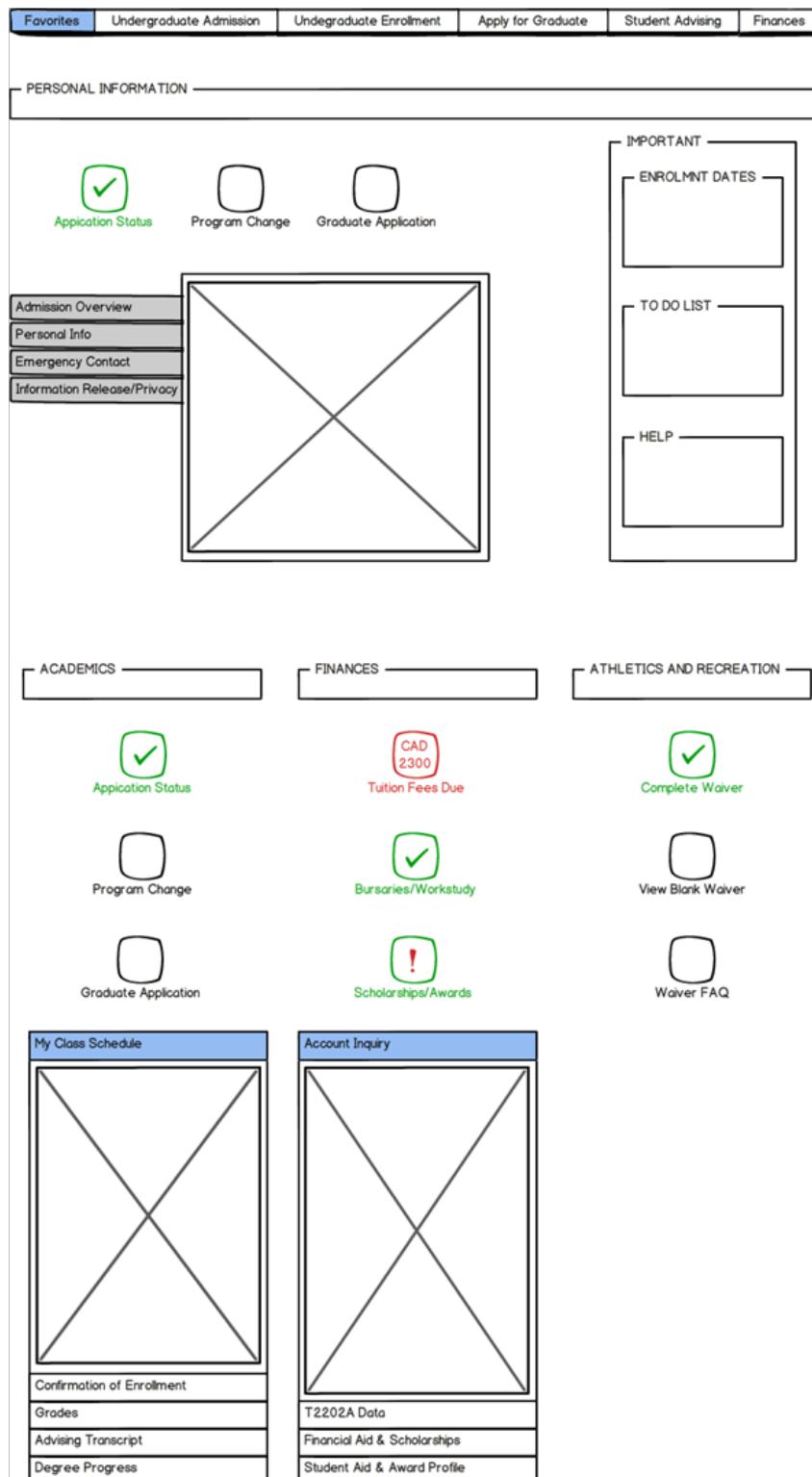
# APPENDIX

## DESIGN PROCESS ILLUSTRATION



# APPENDIX

## DESIGN PROCESS ILLUSTRATION



# APPENDIX

## LIST OF CHANGES

Main changes that were made is based on the feedback sheet of ID 1 to 4. We included what we were missing and reformatted to organize the information in more coherent and efficient manner to clearly communicate our design intention. Furthermore, we also made a new video in order to portray the content in a more well organized manner with the addition of humour where a revised storyboard is shown in the final report.

### Chapter 1

- 2.1, 3.2, 6.2.2, 6.3 and 7.1 is rewritten and edited based on TA's feedback on ID1 report
- Main changes made are the addition of information that was lacking in previously submitted report
- We needed to polish the way we presented our functional requirement and problem statement.
- TA's feedbacks:

#### 2.1 Problem statement & User Goals

- State a sentence (clearly and concisely) for a problem statement
- User goals = what users want to achieve when using the SIS enrollment system
- Say what are the problems of the current system

#### 3.2 Persona

- Make it look pretty
- Provide info that is only related to the design
- Motivator, Task, Context of Use, Scenario

#### 6.2.2 Data Collection Tools

- Separate into "Data Collection Tools" and "Procedure"
- How data was collected

#### 6.2.2 Procedure

- Separate into "Data Collection Tools" and "Procedure"
- What was the procedure used to collect data + experimental procedure
- State what materials were used for the research (laptop, internet, web browser, consent form, stopwatch, microphone)
- How was it tested
- Setup procedure
- What was measured during primary study (how long it take to enroll in a course)

#### 6.3 Results

- Do the results clearly and effectively summarize relevant findings
- Results should be summarized -> in paragraph form -> what we found
- Use data to support answer

#### 7.1 Functional Requirements

- Explain about issues found for the current system then state what to change
- Requirement, Justification, Metric

# APPENDIX

## LIST OF CHANGES

### Chapter 2

- 1, 3.2, 3.3, and 4.2 is rewritten and edited based on TA's feedback on ID1 report
- Design hypotheses was edited to make it more concise than the previous report.
- Overall, other sections of the reports are re edited to be more concise
- TA's feedbacks:

#### 1. Prioritization Worksheet

- Shorten it + make it more concise that goes with design + reorder?

#### 3.2 Design Hypotheses

- Take out some, make it more concise
- Have ones that are based on the prototype to be tested

#### 3.3 Interaction Paradigm & Interface Metaphors

- Redo

#### 4.2 Design Hypotheses

- Take out some, make it more concise
- Have ones that are based on the prototype to be tested

### Chapter 3

- 2.1 and 3
- We felt the need to redo the storyboard for the video, so we created new storyboard with enhanced script and contents for the video.
- TA's feedbacks:

#### 2.1 Insights from User Testing, Feedback & Discussion

- What have we learned by user testing, feedback and discussion
- Talk about results
- Compare results from original system to improved system

#### 3. Storyboard for Project Video

- Redo

# APPENDIX

## LIST OF CHANGES

### Chapter 4

- Our team improved our ID4 report section based on feedback from Week 12 lab session where we had our printed ID4 report to be critiqued and receive feedbacks other IAT 201 students.
- We added missing information and polished up the report by trying to write in a concise format.
- Based on the data we gathered and written on the draft of ID4, we cleaned up the table and graphs to have better and clearer representation of quantitative and qualitative data compared to the stack of data that we had for ID4 draft submission.
- TA's feedbacks:

#### **4. Discussion and Conclusions – Implications for Future Interaction Design**

- Write conclusion including how design hypothesis has been proved or not through user testing and other data that you gathered for the project
- Talk more about your design process and design hypothesis