CS-570 INTRODUCTION TO HUMAN-COMPUTER INTERACTION
SPRING XXXX | PROFESSOR LEWIS-WILLIAMS

PROJECT 1: WEB-BASED SERVICES

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SOLUTION NAME

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INTRODUCTION

When approaching this project we wanted to pick something that would be common to all the students in the class. We also wanted to tackle a specific issue, so we could achieve a tighter focus. This lead us to the process of finding courses, namely, how students use "My Course Guide". My Course Guide is a fairly robust tool that allows students to see all the courses in the UW-Madison system, and has many features to assist in finding specific courses, subjects, professors, etc. Unfortunately, it has several shortcomings, as we had all experienced in some way.

Our group agreed that My Course Guide was useful, and certainly easier than just going through the Student Center to quickly look up available classes. Our problems with My Course Guide come from the clunky interface, an overwhelming amount of options, several of which aren't useful, and a curious absence of other features, particularly when they are present in the Student Center course search. We saw the opportunity to streamline the search options and do a better job linking My Course Guide with other resources students use when enrolling in courses. We weren't able to compare My Course Guide with other software that may be the state-of-the-art in the space as we aren't able to access other institution's course enrollment software. Instead of comparing My Course Guide with other competing software we decided just to focus on improving My Course Guide's usability as we saw fit.

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UNDERSTANDING

Conducting our contextual inquiry began with conducting three interviews with other UW-Madison students regarding their use of the Course Guide and how they went through the process of choosing classes. They would then talk us through their process. All three interviews took place at College Library, in an area near the café. The physical context of this room, which we later detailed in our Physical Model, consisted of several tables in the middle of a room lined by sofas and vending machines. People were coming in and out to study, chat, and use the vending machines.

All three of our subjects were undergraduates studying computer science. The scenario we presented them with was as follows: using My Course Guide, find two courses to fill requirements for the computer science degree while making sure they don't overlap. They each started by opening a separate tab in their internet browsers, going to the Computer Science department website, and finding the page which has a description of the major requirements. They would then pick a course and find it in the course guide. To find a second class, they'd have to open a separate tab and compare times. One of our subjects even went to the website "Rate My Professor" to compare teachers for two different sections. This practice is common among college students. To actually add the class, they would then either use the schedule planner utility in My Course Guide, or go into the Student Center, find the course yet again, and then begin the enrollment process.

Our second scenario was asking the participants to find a lecture, any lecture, taking place at a specific time of day. Sometimes students may have a block of time they wish to fill and filling that time slot with some course takes priority over finding one specific course. All three subjects struggled with this request for awhile. Rightly so, as we found that there is no function in My Course Guide specifically made for searching by time. We suggested that they try using the Student Center to fulfill the request, as there is a parameter in that search utility specifically for searching by time. None of the three knew that this function existed, but all of them agreed it was helpful, and should be part of My Course Guide as well.

The major breakdowns that we noticed were the repeated uses of multiple tabs and the need to use both the course guide and the student center to access all available search tools. Students often get stuck using multiple instances of My Course Guide in order to compare courses as there is no way to do this within one tab. All of the participants in our CI needed to go to a site separate from My Course Guide in order to view degree requirements.

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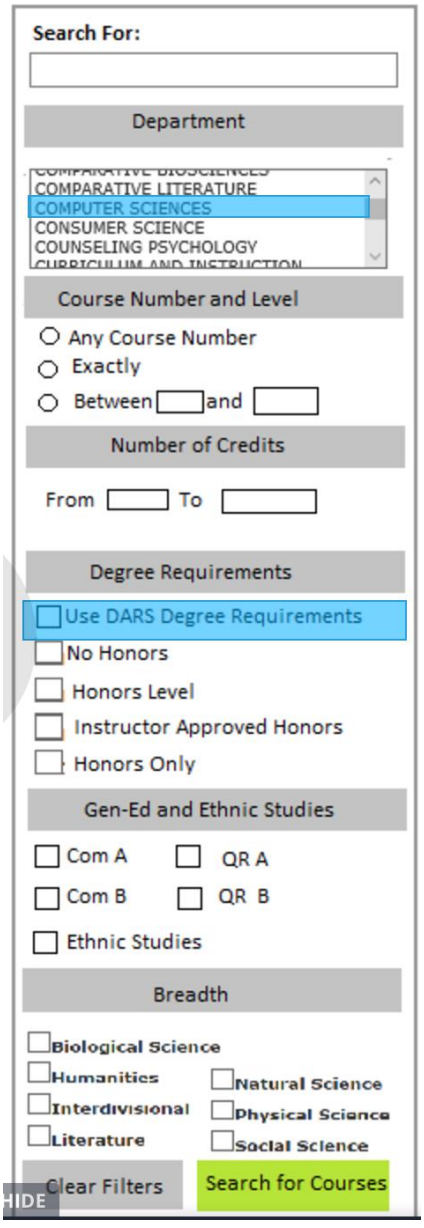
IDEATION

Because of the issues participants had searching for courses by time, the first design task we wanted to tackle was adding this feature. Our team thought the way search-by-time was implemented in the Student Center worked alright but could be streamlined. We thought that removing the “greater than” and “less than” fields in the Student Center time search and replacing them with a simple “between [ ] and [ ]” option would be beneficial.

During our Contextual Inquiries we repeatedly saw participants open a tab to the Student Center to access their DARS degree plan and then open an additional tab to My Course Guide. We felt that we could combine these two processes by better integrating DARS into My Course Guide. We debated between a few design options for integrating this such as a renovating the tabbed view within the Course Guide window that already exists. We eventually settled on the idea of creating a single search parameter that filtered courses based on whether or not they met degree requirements as specified by an individual’s DARS report.

The third major design change we wanted to implement was a general re-ordering and simplification of the search function within My Course Guide. Participants in our CI often spent a fair amount of time just scrolling down the list of search options looking for a specific parameter. Initially, we felt that we could speed up this process by simply ordering the search options in a way that brought the most-used options towards the top of the list. We started working on this and soon realized that we could quite easily condense and combine several of the lesser-used search options to remove even more clutter. We ended up combining options such as Ethnic Studies and Gen-Ed requirements into one section, lowering the position of options such as Thematic Course Groupings, and bringing options like Course Number and Breadth more towards the top of the list of options.



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PROTOTYPING

First, we sketched a potential re-design of the search parameter design in My Course Guide. We wanted to more efficiently present the variety of search options and better sort the options by how frequently they are used.

For our hi-fi prototype we used InVision along with Microsoft Paint in order to model several re-designed webpages in My Course Guide. We created mock-ups of different pages that users will encounter as they search for courses. Using InVision we were able to link the different pages together to emulate the process of searching with our re-designed Course Guide.

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EVALUATION

In evaluating our prototype, we conducted usability tests with three different users. We timed the users while they found a Computer Science course, found a course that met a DARS degree requirement, and searched for a lecture that is scheduled from 1:20 to 2:10. In addition to the data about the amount of time it took and the number of errors they encountered, we used a Likert scale to get feedback from users on the appealingness and efficiency of the process with the original My Course Guide setup and our newly designed prototype. They were considerable quicker in accomplishing the tasks with our new prototype and reported higher levels of satisfaction and ease of use. Here is the data:

	Original version				Improved version (Our prototype)			
Trials	Trial 1	Trial 2	Trial 3	Ave	Trial 1	Trial 2	Trial 3	Ave
Time(sec)	86	120	30	78.7	15	16	30	20.3
Errors	0	0	0	0	0	0	1	-
Satisfaction	2	1	3	1.3	5	5	4	4.7
Easy to use Level	1	2	2	1.7	5	5	4	4.7
Simple Level	1	1	1	1	5	5	4	4.7
Appealing Level	1	2	2	1.7	5	5	5	5
Effective Level	2	2	3	2.3	5	5	5	5
Flexible	2	2	3	2.3	5	5	5	5

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FINAL SOLUTION

In our final prototype we implemented the three changes mentioned earlier; the addition of a DARS requirement search filter, re-ordering and condensing the search options, and adding a time search option. InVision was an effective tool in allowing us to emulate the search process with our altered layout and it allowed us to thoroughly test the usability without needing to write large amounts of code.

Across the board, when using our prototype users spent less time searching for classes and had a far easier time finding classes that met requirements or met at a specific time of day. Users were satisfied with the results and found the design appealing, effective, and easy to use. Although it could be a challenge to implement all of our changes into the current My Course Guide website, we think that the huge gains in usability and satisfaction would justify the work.