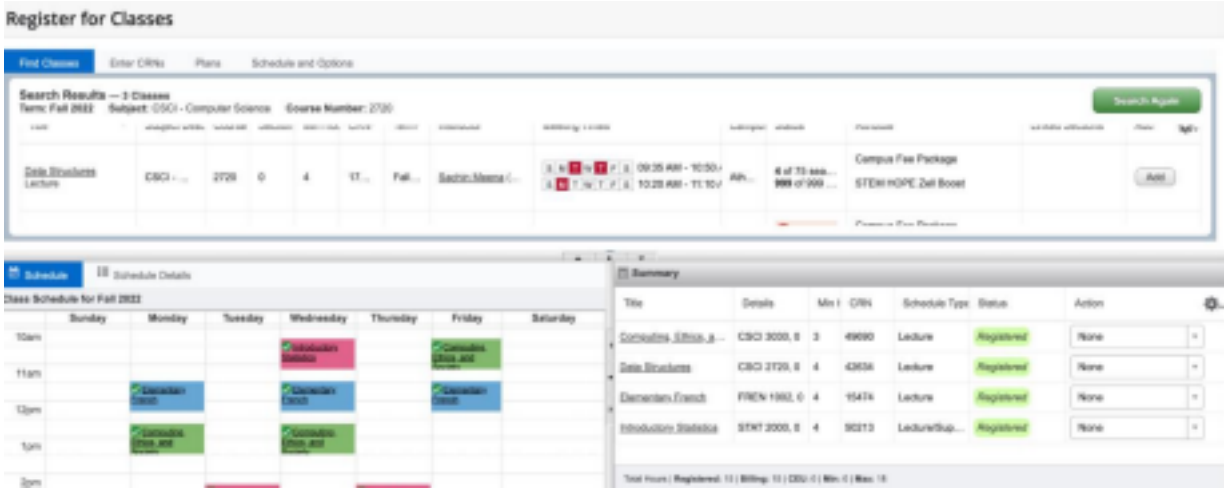
Milestone 2: Definition & Related Work

A. Task / Problem Definition

1. Introduce your problem:



a. Problem:

Currently, UGA is using Banner, a student registration self-service system known as Athena. We find that registration for classes is difficult to navigate for students who need to register for classes, and potentially, instructors. The lack of fluidity on the class registration page leads to a decrease in proficient usage of the application when registering for classes. Certain adjustments could help make the application more efficient and fluid for users.

b. Seven Stages of Action:

i. Goal: User successfully registers for courses virtually

ii. Plan: User has to narrow down the scope of classes that they can take with the required classes their curriculum mandates followed by what courses are offered in the upcoming term

iii. Specify: Decide exactly which classes to register for and navigates to the Athena application

iv. Perform: User logs into Athena and registers for the desired classes for the upcoming semester

v. Perceive: Students clarify which classes they have successfully registered for; Instructors view how many seats have been filled up in the courses they expect to teach

vi. Interpret: Successful registration for classes sets the users on track for the upcoming semester. The users may feel relieved for getting this done, since they are no longer worried about it. Instructors are now able to go through the courses that they are teaching in the upcoming term to plan out their routes

from one class destination to another.

vii. Compare: The user has successfully registered for their classes, but the process could be more efficient. It shouldn't have been a stressful process for users. Students should be able to register for different courses smoothly, without having to go back and forth through multiple pages to find relevant information they need. Users including students and instructors should not be made to memorize information during the process of registration in order to finish this task.

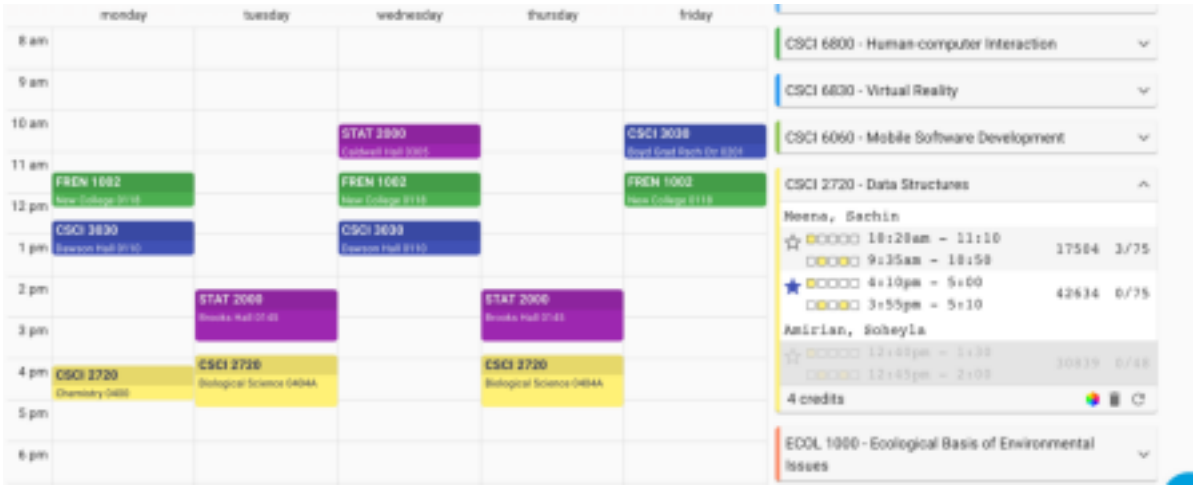
2. Identify your potential users:

Because a major function of Athena is self-registration for classes, all undergraduate, graduate, and phD students, along with instructors are impacted by the lack of usability of Athena. Since Banner, the brand name for Athena, has subscribers from other universities, the potential users and stakeholders also include students and instructors from other universities that use Banner as well. The majority that is severely impacted by this problem consists of new students who have never interacted with self-registration websites and students who are unable to figure out the design layout of Athena as initially intended by the UI designer. A solution would help the students navigate through the registration site better and make the process more time efficient. Along with that, it would also present instructors with an easier and more straightforward way of planning their day with the courses they're teaching. So instead of going through multiple pages to find the information the users need, the solution would provide a way for users to access and see all of the important and useful information they would need in a simple fashion.

B. Analysis of Existing Solutions

1. Describe existing solutions:

Courseoff:

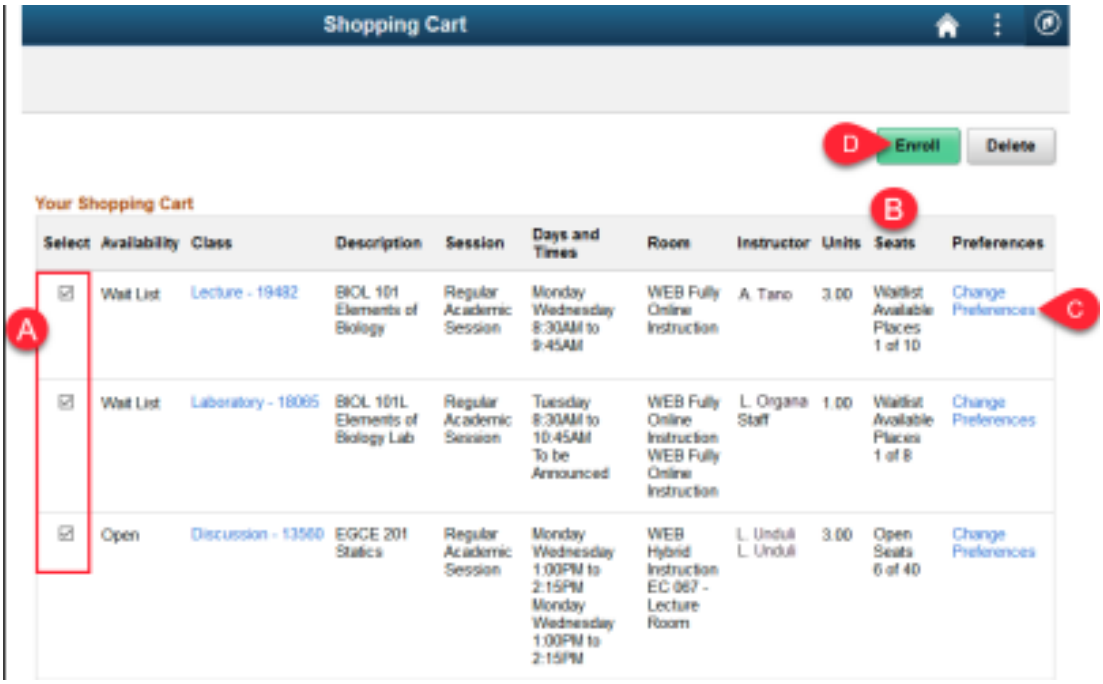


Courseoff is one of the more popular websites that students use today to help them plan out their classes for upcoming semesters. It provides a way for users to minimize the amount of information that users need to memorize when registering. They do this by providing details such as times, buildings, number of open seats, and even the names of instructors in an easily accessible manner. By minimizing/decreasing the amount of information users need to keep in mind when planning out their schedule, it makes the process more efficient and at the same time, less stressful. In an article written by Peterson and Peterson, college students were tested on their short-term memory. For the experiment, the participants were presented with a consonant trigram (three consonants presented at the same time) and asked to count backwards from a number up to 18. The results showed that after 3 seconds, 80% of the participants were able to recall the information correctly, however, after 6 seconds, this number fell to only 50%. After 18 seconds, less than 10% of people were able to recall the given information correctly (1959). If users using Athena have to memorize a multitude of information for an extended amount of time, the result of that is most likely the user forgetting the information at one point and having to go back and pull up that information again for a refresher. That, in turn, would waste a lot of time, and may cause users to be under constant pressure to not forget the information.

Another benefit that the layout of Courseoff gives is the visual representation of the time blocks that each of the selected classes occupy in a 'week at a glance' kind of view. Different colors distinguish the different classes and allows users to conceptually see how frequently a class will meet in a week, along with the duration of a class. In addition to that, Courseoff automatically grays out class sections that have conflicting times with classes that have currently been selected. By having this layout, it makes comparing and weighing classes a much easier task. For example, according to an article by Hunjet and Vuk, they stated that for "80% of information people remember, [they] relate to colors." Colors can be seen as a strong influencer; it can attract more attention to a certain area and or cause some irritation to

others (2017). By color coding each class and allowing users to change the colors for each class, Courseoff provides a better way for users to associate with each class when compared with just the course title.

PeopleSoft:



https://csuf-erp.screenstepslive.com/m/70025/l/1454310-adding-a-class

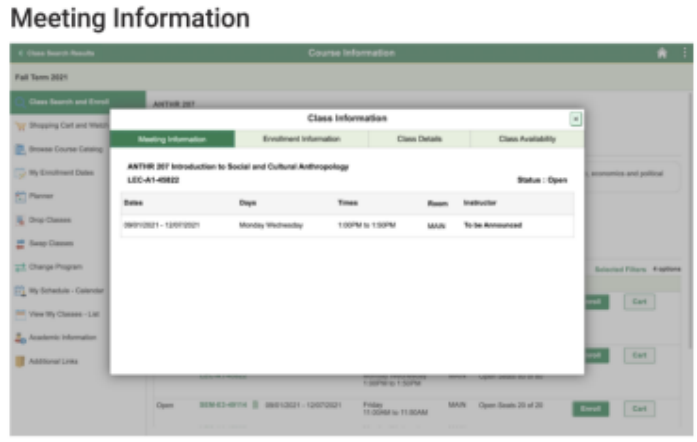
PeopleSoft is a platform tailored by Oracle to allow students the ability to self-register for courses. A negative aspect of PeopleSoft consists of it's rigid layout.The rigid gray and white column layout is difficult for any individual to keep track of which classes are offered at what time and at what destination. This leads to an overload of information for students during the stage of class coordination. The visual layout makes it difficult for students to decipher relevant information such as class destinations and at what times that class is going to be taught at.An article written by Peterson and Peterson conducted an experiment to see how memory is affected when multiple stimulus is introduced to a subject, their findings showcased that "...performance decreased as the length of the distractor duration increased and was interpreted as showing rapid forgetting of unrehearsed items…" (1959). This correlates to how the lack of a fluid design layout can obstruct an individual's ability to formulate a class schedule.

A positive aspect consists of the program's ability to set up a payment method for courses. It also allows students the ability to add on more programs to their current academic curriculum. This is beneficial for students since it allows for a single website to process multiple steps in a student's academic career. The most important aspects of an academic foundation can be built in one website.

PeopleSoft is popular since it requires a tedious amount of steps to ensure that a student has met the prior requirements in order to register for a course. The system goes through a set of procedures to ensure that the student has followed the proper steps, "... planned, pending approval, waitlisted, enrolled, in progress, and completed…". A planned course simply shows up on the student's

intended course dashboard. Pending approval checks to see if the student has met the appropriate prerequisites.This can be nerve wrecking for some students since some courses could require manual approval from the instructor. Approval of the instructor then stamps a student with the approval of the University to officially register for the course. To clarify, it means that a student is only able to enroll for the course after jumping through these hurdles. If a student is able to place a spot, then the course will finally shows as enrolled in their dashboard. When the class is in session, it shows as In-progress and subsequently as completed after the final grade has been submitted by the instructor. Although this approach can be frustrating to students, it keeps a university's ability to hold its programs to it’s standards without risking a faulty pass to a student.

Workday Student:



https://www.ualberta.ca/registrar/registration-and-courses/class-schedules.html

Workday Student System is a popular software used by various schools for class registration. Initially, it resembles a similar layout to PeopleSoft. It displays the class meeting times and locations in a grid layout. However, the information is able to be easily found. This is why universities and students prefer this application for class enrollment. As seen in the images above, the main page follows a cohesive layout that makes it easier for individuals to conceptually understand. It flows from dates the class will occur, to the frequency of class meetings and timings, to the class location and finally how many seats are available. The green button that highlights the enroll button clearly labels where a student has to navigate towards in order to register for a seat in the course. As stated from an article "The Psychological Impacts of Colors in Marketing", "…attractive colors on a packaging are…green…" (Hunjet & Vuk, 2019). This aids in the universities ability to subconsciously incentivize students to register for additional courses, which results in additional funding for the university. It also is in theme with the Universities colors. Overall, it's a smart tactic for universities.

Another benefit consists of its smoother appeal to the overall class registration process. The pop-up tabs display more information to the student. It consists of displaying relevant information that a student would find useful. For example, the tab starts with the meeting times, moves to the enrollment details, then class details and finally class availability. The proximity of relevant information helps a student that is building the framework of an academic schedule. This is the type of mindfulness that

should be allotted from designer to user.

A negative aspect of the application consists of the same rigid block layout for certain filtration services that the application offers. It can be difficult for individuals to scroll up and down in the hopes of finding what they may be filtering to. It is not a useful utilization of screen space for individuals who are in a hurry to register for courses. This feature could be modified to follow the theme as the course enrollment page, in terms of usability.

2. Describe potential guidelines and solutions:

As a federally funded institution, UGA services must conform to the guidelines under section 508. Our proposed solutions would seek to follow and uphold these guidelines regardless of any changes being made. UGA conforming to the section 508 guidelines, which increases accessibility and visibility, better serves all users of its services.

One of the guiding principles behind the solutions we are proposing is Promoting Universal Usability with Multi-Layer Interface Design (Shneiderman, 2002). As mentioned in our problem proposal, new users find the current interface design of Athena to be overwhelming due to an overload of information and controls. The existing solutions utilize this principle by including a week-at-a glance feature to help users visualize their class timings. They also have similar search functions, so that users do not feel overwhelmed when utilizing a different registration software. Athena does follow this design principle for some of its features, but we believe it can be further implemented to increase ease of access for new students.

We also wish to implement Norman's Principles of Good Design. Currently Athena has multiple features on the registration page that violate Norman's Visibility Principle. Tutorials on how to better use Athena are not visible on Athena, and instead must be viewed on an external site. Athena shows extra times on the calendar where courses cannot be registered for which pushes down the actual course timings, usually out of sight, and forces users to scroll down to access it. Information regarding where your classes are located or how to interact with different interface panels are hidden behind multiple clicks. The other existing solutions implement this principle and make it easier for users to view and access relevant information in a smaller number of clicks.

The information regarding class location also fails in meeting Reduce short-term memory load of Schneiderman's Golden Rules. Students are usually thinking about which courses they need to sign up for the semester and are unable to recall a lot of other information that is being provided on Athena's registration page. In order for users to access this information, they have to go through multiple clicks, and a few more clicks to go back to sign up for more classes. Existing solutions like Courseoff exemplify this principle by providing details such as times, buildings, number of open seats, and even the names of instructors in a more easily accessible manner.

C. Proposed Solution

1. Proposed Solutions:

- Cleaner layout for potential classes regarding class timing
- Visual indicators to block schedule sections of day to classes
- Section of page specifies travel time between classes
- Cleaner layout for registration page

We propose to design a new registration page that prioritizes a student's schedule and course information. We plan to adjust the schedule panel by cutting down the hours displayed on the panel to resemble business hours. Notably, we plan to cut out the hours between 10 pm to 8am. This will allow users the ability to not have to mundanely scroll up and down to certain hours that classes will be in session for. The current schedule panel shows the course name and the expected duration of time the class will be administered for. Since it's an estimate of how long the class will be in session for, the users have to navigate through a sequence of commands in order to find the specified "Instructor/Meeting Times" about a certain course they may plan to take. Concatenating the page that consists of the specified time and class location with the schedule page, that allows students to associate a certain color block with where and how long a class will be expected will create a smoother class scheduling process. The location and classroom will also be added to the class section to help users arrange their class schedule. The proposed solution is more easily navigable and easier to learn for new users due to these proposed changes.

2. How will you measure success?

The primary ways we will measure success will be through time expended from beginning the task to completion, usability, and number of clicks required to achieve the task. Time is an easy measurement; we could calculate how long it takes an average user to register for their classes using the current system and then with our proposed system. Usability can be measured through how quickly a completely new user can pick up and use the system to achieve their goals. Number of clicks can be considered a usability factor and can be quantified and then compared through standardized tests performed using the current system as well as the proposed one. Reducing the number of clicks is advantageous as it increases user happiness and typically reduces the time expenditure. By reducing clicks, we increase usability and decrease time usage.

D. Summary Video

https://youtu.be/DbhEhlaSIzo

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