Redesign of the University of Idaho Schedule of Courses Website

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Abstract

The University of Idaho schedule of courses website is an important tool used by students, faculty, staff, and many other individuals affiliated with the institution. The course schedule website serves the purpose of helping students and other stakeholders achieve their goals. However, the website lacks some of the key features that improve the user's interaction with the website, and are typically offered in course schedule websites in other academic institutions. In this paper, I will describe the process I followed in the redesign of this website. The design process involved conducting user research, establishing design requirements, developing prototypes, and user testing. A final prototype can be viewed at https://xd.adobe.com/view/7f749955-5fe5-41e5-69c5-63436d11995b-0945/?fullscreen.

Redesign of the University of Idaho Schedule of Courses Website

A course schedule is an important tool provided to students by academic institutions, in order to arrange an easy and quick way to view a list of classes provided in a specific semester. The class of schedules website also provides other information pertaining to the classes, such as the dates and time in the week they are taught, the location they take place, the instructor of the course, the course specific numbers needed for registration (CRN) and much more. The University of Idaho schedule of courses website is available for access to a population of 18,000, thus it is important to ensure that this website is easy to use for all the potential stakeholders.

I was able to identify several different stakeholders within this 18,000 population. The key stakeholders include current students, faculty, prospective students, staff members at the registrar's office, and other university staff. These groups of stakeholders access the schedule of courses website with a variety of different goals in mind. For example, faculty that carry out duties as advisors access the website in order to find classes to recommend to their advisees, while staff members at the registrar's office may access this website to update schedule information and other maintenance purposes each semester. The stakeholder population of prospective students may access the website with the intent of finding information about courses that are typically offered in a semester. Current students use the website for the primary purpose of finding information about the courses offered in order to register for classes. For this project, I have focused on the current students population of stakeholders.

As the first step in the requirements gathering phase of the design process, I obtained information on the current student population of the University of Idaho. I was able to gain information on the current student population through demographic data and reports available on the university website. The 11,841 currently enrolled student population of the university consists of students that have differing academic goals. Students differ in terms of the level of the education they are completing, such as Bachelors, Masters, or a Doctoral degree. They also differ in terms of the location of the campus they attend, as well as whether they are enrolled in distance or extended education programs such as dual enrollment. Additionally, 2,647 of the

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current student population are newly enrolled students. The newly enrolled student population includes students beginning their undergraduate program, new transfer students, and graduate students. Since students that are newly enrolled may not have been previously exposed to the schedule of courses website, their experience of interacting with the website would be different to those that have previous experience with the website. Thus, when gathering requirements I focused on the users as two separate groups, first-time users and experienced users. Some of the characteristics of the expert user group are, having experience using the schedule of courses website, and being advanced beyond their first semester in their respective academic program. They may be familiar with their relevant academic program requirements, and may look for ways to quickly and easily find all available courses. First-time user characteristics include, unfamiliarity with the course schedule website, unfamiliarity with program requirements such as general education requirements, and having a mental model of scheduling websites based on previous experiences.

In order to further understand the design requirements, I sent out an online survey (See Appendix A) via email and some social media platforms. The survey consisted of a task to find a specific course offered in Summer 2019 and asked participants to describe steps they took to complete the task. The survey also consisted of questions regarding any features of the website users like, did not like, features they would like to see changed, and whether it was easy to use the website. There were a total of five respondents to the survey, and four of the participants had not interacted with the website prior to the survey. One of the major complaints regarding the website included the discoverability of the content in the side menu (See Appendix B & Figure 1). Users also reported that the lack of a search engine to aid with the task was inconvenient, the main page was disorganized, and that the website was not visually pleasing. However, feedback showed that respondents liked the side menu feature that listed all of the programs continuously, that program selection did not involve the use of a drop-down menu, and that users could access all of the courses in a specific program with only two clicks of a button. Additionally, most of the respondents reported that using the website to complete the task was very easy.

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After the online survey, I conducted a structured interview with a current graduate student that is an experienced user of the schedule of courses website. The student was interviewed while they interacted with the schedule of courses website. The student was asked a set of questions indicated in Appendix C. The student indicated that they used the schedule of courses website about five to six times per semester, especially during the weeks leading up to registration for the next semester. Through this interview, I was able to gain detailed information about the student's purpose of visiting the website (See Appendix D). The interviewee mentioned that their primary goals were to find a few courses that fulfilled their major requirements, and to find several elective courses that would help them gain skills in subjects outside of their major study area. The student also reported feeling confident when interacting with this website due, as they would only have to take a few quick steps to view all of the courses available in a specific program. One the student's goals were to find elective courses in other subject areas. The user indicated that the inability to view courses available across multiple programs and compare courses to be quite frustrating. In addition, they disliked the lack of search options, and found that such a feature would be helpful when finding specific courses required for their major. Another issue the student found to be frustrating about the website, was the need to use external resources during the course selection process. Some these external resources include the university course catalog, which provides the descriptions of all of the courses offered within an academic year, and the respective program websites, which provides information on the required courses for a major. The student stated that a feature that would allow users to access this information within the schedule website would improve the course selection process. The student also noted that the website was not visually pleasing, and that they would like to see an improvement.

Based on the information from the online survey and the interview, I was able to finalize the following three requirements for the redesign of the website,

- 1. Students should be able to find courses quickly and efficiently in about two clicks.
 - a. This requirement would apply to both first-time and expert users.
 - b. Users should still feel confident when interacting with this website and be able access all of the courses in a few simple steps.
 - c. Users should also be able to further refine the course results to find specific courses
- 2. Users should be able to find all relevant information needed to make decisions regarding course scheduling within the course schedule website
 - a. Students should have access to course descriptions without having to access an external source
 - b. Students should also be able to view the required course for their major directly through the course schedule website
- 3. The website should be more visually appealing and align with the overall University of Idaho brand.
 - a. The information presented in the course list display should be minimized to improve readability

Afterwards I began the initial stages of prototyping and started building mockups. Since users found the discoverability of the content in the side menu to be low, bringing attention to the side menu and its content was a main task in the redesign of the website. To understand which structure of the website would be most suitable for the redesign, I created two low-fidelity mockups and tested them on several users. The first mockup retained the side menu in the original website, but brought attention to the side menu by eliminating the content in the main page area and displaying term selection in the form of a dropdown menu (See Figure 2). The second mockup displayed the term selection, and program selection options in a dropdown menu (See Figure 3). After building the mockups, I was able to get some feedback from a total of five first-time and expert users on the website structure they preferred. A majority of three users preferred the programs listed in the form of the side menu than in the dropdown menu placed in the center of the page, and found the dropdown menu to be cumbersome. The remaining two

respondents found the dropdown menu located in the center of the page to be visually appealing. However, they noted that being able to select specific programs from the side menu in one click would be beneficial as well.

After I finalized the basic structure of the website, I began constructing the prototype. To address the problem of discoverability, I placed a term selection dropdown menu in the side menu and eliminated the term selection links that were displayed in the main page area (See Figure 4). To ensure that users would be able to access the courses available in each program within about two clicks, the list of programs were made to display within the side menu (See Figure 5). Next, to address the requirement of providing user with way to refine their search results, I proposed a feature that would allow users to select and view courses from multiple programs (See Figure 6). To further enhance the user's ability to refine their course results, I implemented a search engine feature that would allow users to search for classes by certain parameters such as time of day, course number, and location (See Figure 7). The search engine feature can be accessed by clicking on the "Advanced Filters" option. This would be useful for both first-time and expert users when searching for specific courses that fulfill major requirements.

When addressing the requirement of adding a feature that enables users to access all relevant information needed to make class-scheduling decisions, I incorporated a way of displaying the course descriptions through a pop-up window by clicking on the course name. The pop-up window would contain information such as the course description, prerequisite and corequisite requirements, and additional course fees (See Figure 8). I also integrated a method for users to obtain degree audit information such as classes taken in previous semesters, and classes needed to fulfill major requirements in future semesters. Students would be able to view this information by clicking on the "See my Courses" option. Since this information is available through the VandalWeb degree audit registration checklist view, my proposed idea is to integrated this information directly into the course schedule website through a pop-up window (See Figure 9), after signing in to their VandalWeb account. I also wanted to enhance the visual

appeal of the website following the University of Idaho brand, as well as by restructuring the amount of information displayed in the course list display (See Figure 6).

Following the completion of the prototype, I was able to test it with two expert users. The two individuals conducted a heuristic evaluation on the prototype and identified several usability issues. Firstly, they identified that while the advanced filters option was helpful, the labels for the search criteria may be confusing and misleading, depending on users' previous experiences with course scheduling websites. They also found that the feature in which users can click on the course name to pull up the course description pop-up is not discoverable to both first-time and expert users. Another problem was that the "See my Courses" option was not indicative of its function, and was identified as potentially confusing for the user. One of the evaluators pointed out that due to this lack of clarity, the immediate redirection to the VandalWeb sign in page after clicking the "See my Courses" link may discourage users from using it in the future. However they also liked certain features of the prototype. The evaluators indicated that the restructuring of the course list display allowed for better readability and comprehension of the course information. They especially liked the clear status indicator of seat availability for each course in the course list display (See Figure 6). They also stated that the prototype followed their mental model of a course schedule website based on their previous experiences with such tools at other academic institutions.

Afterwards, I attempted to address some of the usability issues that were brought up by the evaluators in a second prototype. To solve the issues of having insufficient information regarding the advanced search filters, and the "See my Courses" option, I integrated pop-ups that provided clear descriptions of the functions of each search criteria. Clicking a small information icon placed beside the respective labels would allow users to access the pop-ups (See Figure 10 & 11). In the future I would like to find ways to improve the discoverability of the course description feature, and further investigate the technical requirements of incorporating the degree audit information directly to the schedule of courses website.

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Appendix A

Online Survey Questionnaire

Usability Survey

I am completing a project for one of my classes that involves redesigning an interface based on any usability issues that prevent fast and easy use by you, the user!

I would really appreciate it if you could go through the website (the link is provided below), and describe (with no restrictions!) any features of this website you might find helpful, or not so helpful! Please do so by answering some of the questions indicated below. Thank you so much for your time and help!

The website I have linked gives information regarding the class schedule of an academic institution. You are welcome to click around the website and explore the different webpages.

Here is the link to the website: https://webpages.uidaho.edu/schedule/

Let's say you're a student at this academic institution, and you're trying to figure out which classes to take for Summer 2019, as a Marketing major. You only know that you must take the class titled "Retail Distribution Management".

Very briefly describe the steps you took navigating this website to carry out the task indicated above.
What didn't you like about the website (what was challenging, what was frustrating etc.)
What are some things you liked about the website (features that made it easy to carry out task etc.)
If you could change 3 things about the website what would they be? What would those changes look like?
Overall, how easy do you find using this website?

Appendix B

Online Survey Questionnaire Responses

Very briefly describe the steps you took navigating this website to carry out the task indicated above. 5 responses

To register for summer 2019 Marketing, retail distribution management, I clicked on the summer 2019 all courses link and clicked marketing from the drop down menu. It was difficult to read the options on my phone (font too small).

Selected "all courses" under Summer 2019, selected "marketing" on the left side of the screen, scrolled until I found retail distribution management

I first clicked on Summer 2019 and then, chose Marketing and found the Retail Distribution Management course.

On the website provided, I first made the mistake of clicking on the "online courses" for Summer 2019 on the left-hand column menu and it did not pull up anything (the link was broken!). Then I had to hit the back button to get back to the original site. This time, I started by clicking on "All courses" in Summer 2019, which opened up a new column/menu on the left hand side listing hundreds of majors. Then I scrolled down until I found "Marketing", and clicked on that. That opened up the listing of courses with timing/dates on the right-hand side menu. Then I scrolled down carefully again to locate "Retail Distribution Management".

I clicked "summer 2019", then scrolled on the left side to find "Marketing", and then did "command + F" to search for a course starting with "retail", and this was the only course available. Took less than 20s to do this.

What didn't you like about the website (what was challenging, what was frustrating etc.) 5 responses

The organization of the different links on the website was not so intuitive. It's seemed a bit disorganized

it's ugly

The left hand navigation pane could have been better designed to make it obvious that it was for selecting specific departments, not for courses (as I initially assumed)

This was a terrible way to search for a course. First, the home page was not designed and laid out intuitively. Not sure what the purpose of the menu on the left hand side (listing Summer, Spring 2019) was, because when I clicked on Summer 2019 online courses, the link didn't even work. Its just a bunch of text with no direction on where to start and it is not visually appealing or meaningful. Second, there was no option to search for courses by selecting semester, major, etc. from a drop down menu and then typing keywords into a box. That should be an essential option that was not available. Third, I had to keep scrolling down very long lists of majors and courses within majors to find the course that I wanted. This is just time consuming, particularly because

the layout is so disorganized. Finally, once I found the course in the list of courses, I was not able to see a course description (even briefly) to figure out what the course is about. How am I supposed to choose courses without knowing what the courses is even about?

None.

What are some things you liked about the website (features that made it easy to carry out task etc.) 5 responses

I like the all courses options displayed in the center of the website.

every department is visible (I don't have to search for all of the departments under "school of arts and sciences" "school of technology" etc)

It made it easy that I only had to go to two pages to find my course.

None. This was the worst course search experience that I have had across many institutions.

It was very straightforward. The majors were listed on the left side, so I didn't have to access fro ma drop-down menu, which can be annoying at times.

If you could change 3 things about the website what would they be? What would those changes look like? 5 responses

- 1. How it is displayed on smaller electronic devices (i.e. phones)
- 2. Organization
- 3. Adding options for search engines in the sub categories for an easier and faster way of finding things/information..

make it less ugly, make it look more modern, and maybe add a search bar

I would prefer seeing the course titles right after the CRN column

First priority would be to add a search option that allows filtering by semester, major, department/school/college, online vs. hybrid vs. regular, number of credits, time, day of the week, etc. Also include keyword option to just search for specific course title. Second would be removing the clutter on the home page. There is no reason to have the left hand column menu and the stuff on the right-hand side because they are essentially the same. And the titles that you click on are not meaningful or intuitive. Third, add brief course description that you can see when you hover cursor on course title. Finally, this website really needs a visual overhaul. It is not easy to look at or make sense of, and looks unreliable and underdeveloped.

The only thing that was difficult was the color scheme. It would be nice if alternating rows of courses were colored differently i.e. MKTG 422 and MKTG 426 were grey, and MKTG would be yellow. Makes it easier on the eye. Maybe having the table titles appear even as you scroll

down the page, rather than only at the top (this makes it harder to remember what each column stands for).

Overall, how easy do you find using this website? 5 responses

It's pretty easy but could be better.

easy but unpleasant

On a scale of 1 to 10, 10 being the hardest, I think it was a 3

Very difficult. Most challenging course search experience that I have had across multiple institutions.

On a scale of 1-10, with 1 being most difficult, and 10 being easiest, I would rank this website a 9. The only difficulties were eye strain and table headers, which could have made it difficult if I were scrolling down the page to look for more courses.

Appendix C

Usability Interview Questions

- 1. What is your current occupation?
- 2. How often do you use the University of Idaho class schedule website?
- 3. When was the last time you interacted with this website?
- 4. Why did you engage with this website (What was your purpose of visiting this website)?
- 5. On a scale of 1 to 5 (1=not at all confident, 5=very confident), how would you rate your level of confidence in using this website?
- 6. What tools do you use, if any, to help with this task?
- 7. What was the overall nature of your task when using this website?
- 8. Please describe your experience with this tool.
- 9. What are you thinking as you view the website
- 10. What was frustrating about this website?
- 11. Let's say you're looking for a particular class. What steps would you take to complete this task?
- 12. Have you used schedule of courses websites at other institutions? If so, what are some features on this website you would like to see in the University of Idaho website?

Appendix D

Usability Interview Responses

- 1. What is your current occupation?
 - a. Graduate student in psychology and communication department
- 2. How often do you use the University of Idaho class schedule website?
 - a. About 5 to 6 times per semester
- 3. When was the last time you interacted with this website?
 - a. 7 days before this interview
- 4. Why did you engage with this website (What was your purpose of visiting this website)?
 - a. "To look at classes, to figure out when classes are, to decide which classes to take next semester, to develop my schedule for next semester"
- 5. On a scale of 1 to 5 (1=not at all confident, 5=very confident), how would you rate your level of confidence in using this website?
 - a. 5
- 6. What tools do you use, if any, to help with this task?
 - a. The University of Idaho course catalog webpage to find descriptions of the elective classes
 - b. The psychology website to find the core requirement classes of the major
- 7. What was the overall nature of your task when using this website?
 - a. I was looking for details about the required classes for my major
 - i. I knew some information of the major courses that were required
 - b. I was also looking for some elective classes to take
 - i. I searched for different types of electives
 - ii. I was looking for something interesting to take
 - iii. I knew I wanted to take a class in graphic design, but I didn't know if it would count towards my major (major requirements)
 - iv. I clicked through some of the departments to find all of the classes that would be available
 - v. I didn't like that there were no course descriptions
- 8. Please describe your experience with this tool.
 - a. Not great
 - b. It's clunky and unintuitive
 - i. What do you mean by unintuitive?
 - 1. When I click on the first link that says "all courses" for Fall 2019, I barely noticed that the sidebar menu had changed to display all of the departments.
 - 2. And then I have to keep scrolling through the department list to find the department I want to look at.

- 3. I wish the list of departments that shows up was more discoverable, like it showing up on a new page
- 4. On the first page, the sidebar menu doesn't have any links that are useful to me
 - a. Why are the links for the off campus and on campus classes listed together
- 5. This website has useless functions that don't help in any way
 - a. The sidebar can be expanded to take up the whole window, covering the rest of the main page, and also minimized to for it disappear form the window completely. If I did this before I selected the course link in the homepage, I would never notice that the sidebar had changed to display the department list.
- c. I can only view classes of one department at one time. I would like to be able to view classes in different departments to easily compare between classes of different departments to figure out if there might be a time conflict in the classes I want to take
- d. I would also like to be able to see the relevant required classes for each major through the course website, without having to refer to other resources
- 9. What are you thinking as you view the website
 - a. Bland, it looks like it is still loading. In my first experience with the website as a new student, I accessed it through my phone. I thought the website wasn't loading properly, so I went on my laptop to access the website again. But I found that the initial interface that I had seen on my phone was the same/correct interface of the website.
- 10. What was frustrating about this website?
 - a. Sidebar, it was difficult to navigate all of the options
 - i. Can only see classes for one department at a time
 - b. Can't search for classes based on specific information
 - c. Need to see class information for more semesters in the future
 - d. Title bar in the class list display is not frozen, can't see labels of information when scrolling down
- 11. Let's say you're looking for a particular class. What steps would you take to complete this task?
 - a. Click on all courses
 - b. Move cursor to sidebar and scroll through menu to find the relevant department
 - c. Click on the relevant department
 - d. If I know the name or number of the class, I use CMD + F to find the class
 - e. Otherwise I scroll through the list of classes to find the class

- 12. Have you used schedule of courses websites at other institutions? If so, what are some features on this website you would like to see in the UIdaho website?
 - a. Yes
 - b. Having the option to select multiple departments when viewing classes
 - c. The option to see course descriptions (pop-up window)
 - d. Also, What are some features you liked about the UIdaho website, you would've liked to see in the other schedule website?
 - i. Not having to click too many times to view all of the classes in a department
 - ii. The department names are listed in full, I don't need to guess what the abbreviations stand for

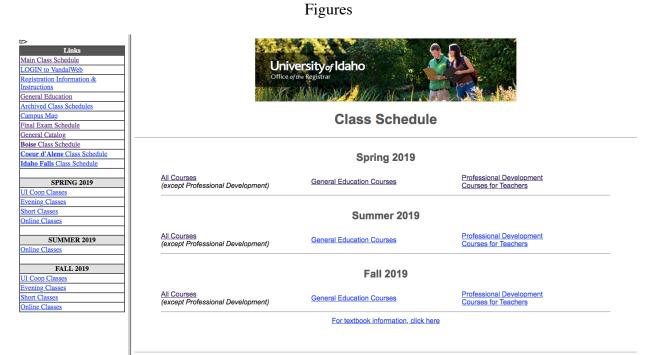


Figure 1. The current University of Idaho Schedule of Courses Website

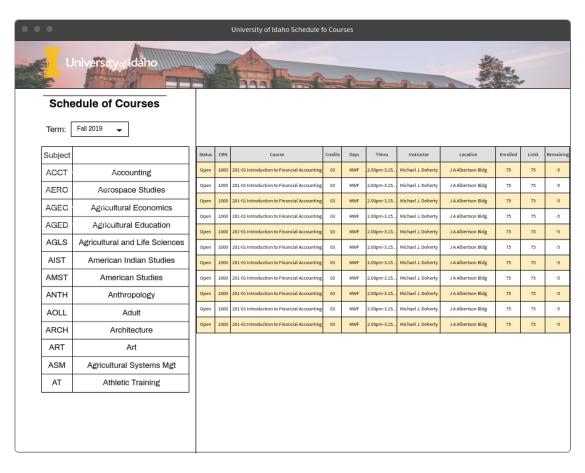


Figure 2. Mockup with side menu.

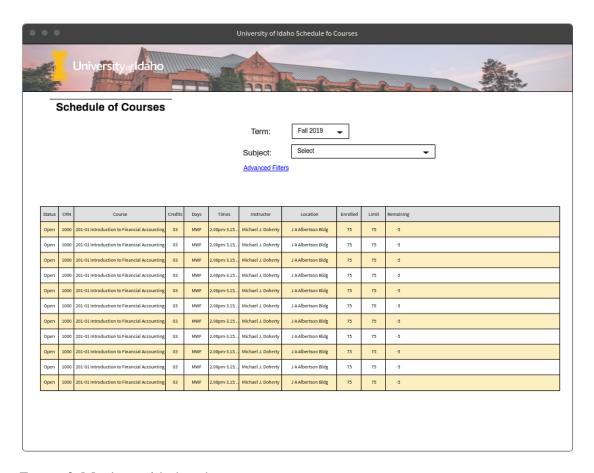


Figure 3. Mockup with dropdown menu.

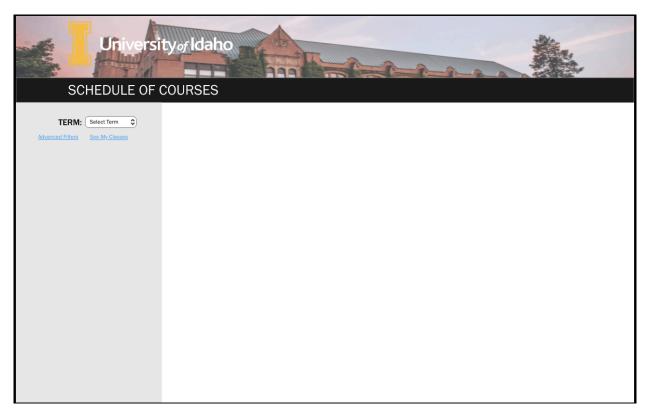


Figure 4. Prototype screenshot displaying term selection dropdown menu

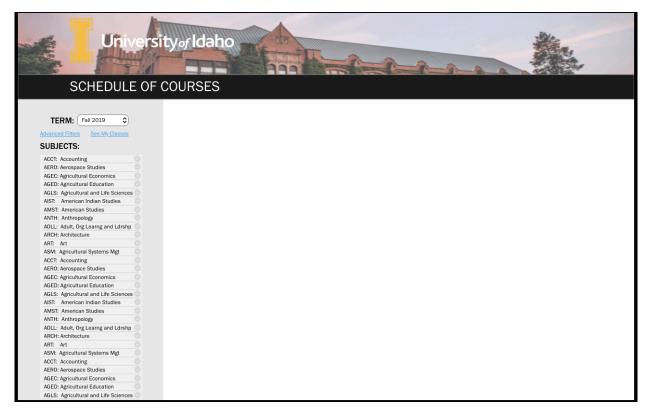


Figure 5. Prototype screenshot displaying program selection list in side menu

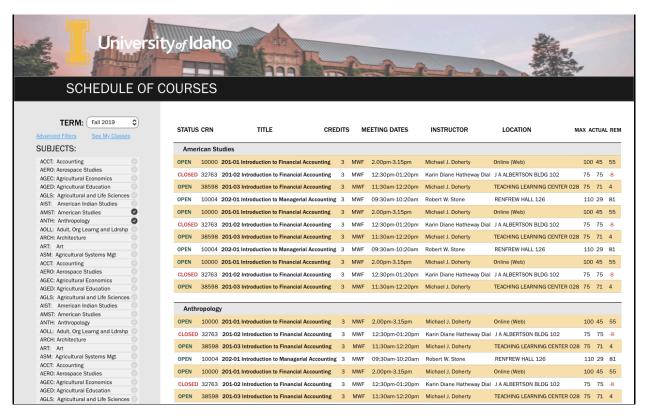


Figure 6. Prototype screenshot displaying multiple program selection

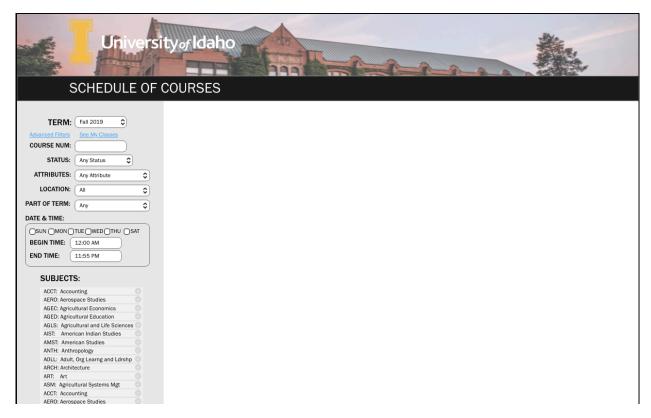


Figure 7. Prototype screenshot displaying advanced filter

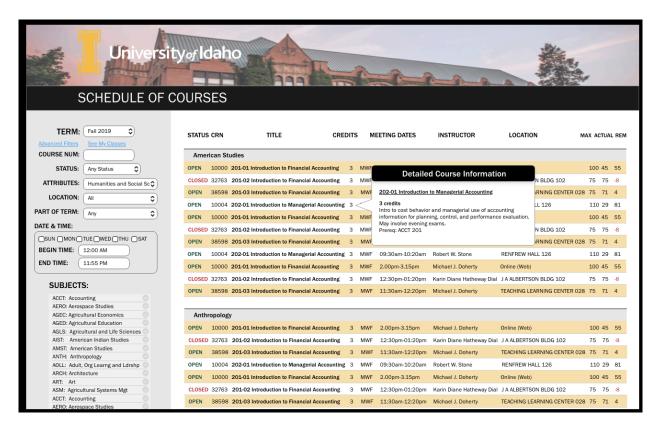


Figure 8. Prototype screenshot displaying course description pop-up

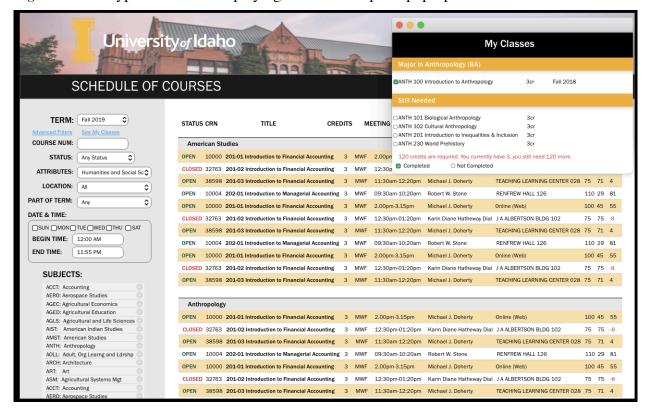


Figure 9. Prototype screenshot displaying degree audit information integration

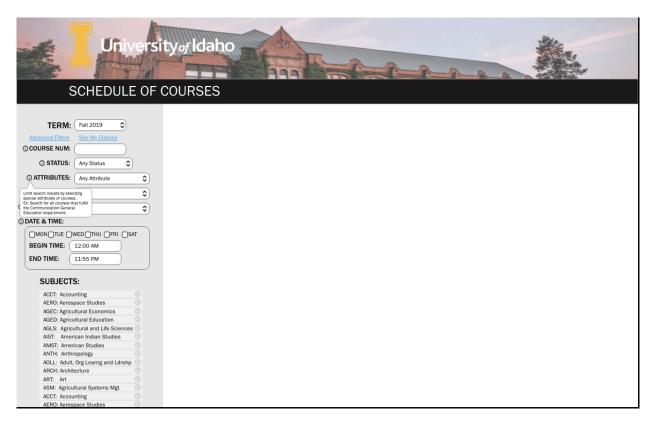


Figure 10. Second prototype screenshot displaying search criteria descriptions

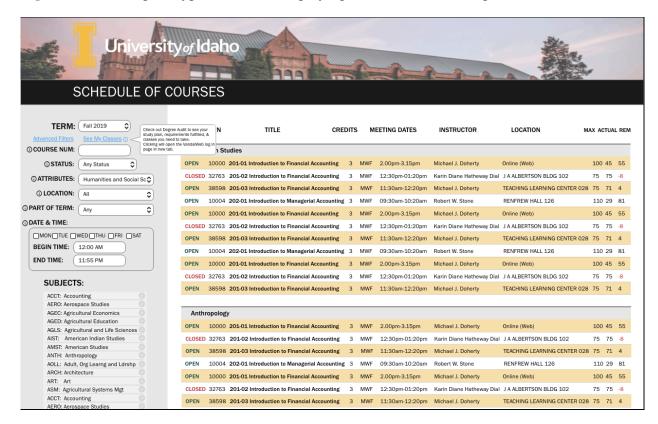


Figure 11. Second prototype screenshot displaying "See my Courses" feature description