

# On the Right Course

## The Big Idea

When registration period comes around, the question, “What class should I take?” always pops up. Because several factors fall into choosing a course, Olin students are left wonder what class they are not only able to take, but also need to take.

### Minimum Viable Product

Our minimum viable product will be an advanced data visualization of when courses are taken during an Olin career. The user will be able to filter the data by courses, majors, or time (semester) so that they can visualize what most people have taken and how that can inform what they take in the next semester. The visualizations will dynamically change based on what is being filtered.

### Stretch Goal

A stretch goal would be to have our system somehow integrate with my.olin.edu to have the user input their login information so that the system could automatically see what courses that person has already taken and what their major is and inform them with more information about their specific senario rather them doing the work to filter the information. In addition, this project will hopefully continue to be useful as the years go on; therefore it must be easy for Linda Canavan and Vivien Bouffard to link the registrar information to our product so that it can be used when more classes are added and taken.

## Learning Goals

### Team Learning Goal

Our team learning goal would be to create a graphically beautiful interface that will usefully impact the Olin community. Because of this goal, there is great reliance that our resulting project is user-friendly and robust.

### Individual Learning Goal

Aditi: One of my individual learning goals is to learn more about graphics and how to make things more visually appealing on the user-end in terms of this visualization tool.

Jess: Although my goals very much align with Aditi, my primary goal is to generate robust code that sustains normal use from the public. The resulting product must be visually appealing and easy to use.

## Implementation Plans

The actual manipulation of the data is based on skills that we already have (pickle for example). We can create dictionaries for each of the classes or semesters (based on how exactly we want to show the information) and then use those dictionaries as a basis of our data visualization. For the actual visualization, we can use one of many libraries in python (bokeh, matplotlib, plotly). We would have to do a little more research as to what would better fit our needs. Depending on how we want to disperse our tool (either through a website or through more formal means, such as an olinapp), we would have to also do some front end implementation using tools like html or css.

## Project Schedule

March 26th: Project Proposal due

March 30th: Format data - sort courses by time and count frequency at that time

April 2nd: Format data - assign color to courses, group courses by major; Implement static visualization of all courses (with avg number of people taking course) for each semester for all 8 semesters

April 6th: Research how to implement final UI (is it online?); Implement search interaction by course, major, and time

April 9th: Implement static visualization of output after search; Research animations or transitional visuals

April 13th: (Aditi in Chicago): Test final UI format with static visuals and importing from python

April 16th: Work on implementing draft of final UI

April 20th (Patriot's Day): LAZY DAY

April 23rd (Jess in CA): Implement draft of final UI format - search interaction works and displays visuals

April 26th (Jess in CA): revise schedule/maybe go to stretch goal

April 30th: revise schedule/maybe go to stretch goal

May 2nd: Wiggle room day - keeping this day free for any unforeseen circumstances

May 6th: Project due and Demo

## Collaboration Plans

Our plan is to use mostly pair programming. We have worked together previous (in the interactive programming assignment), and we found that working together through pair programming worked much better than trying to work independently. Also, right now, there doesn't seem to be a concrete line between the parts of the project, so it makes a lot of sense to do things together and if it seems as though we can divide, we can make the decision further down the line. Most of our project is linear (first we analyze the data and create a static visual, then we make a dynamic visual, then we make it into a tool), it makes a lot more sense to work together rather than in parallel.

## Risks

The biggest risk that we can see for the success of this project is making sure that it is actually something that is useable and that will be used. This tool has the possibility to be integrated into the Olin community, but I think without an end of life plan for the project, it can become lost. It's important to test our project as it goes along to see how well it fits into current structure and how usable it is currently and how it can be used in the future.

Another risk would be if we don't get any useful information for the students. It would be easy to get interesting information from the data that could help the school, but the important thing is formatting this data in a way that will help students better understand their own individual journeys through Olin. Because Olin is such a new school with always changing curriculum, some data may be useless and outdated.

## Additional Course Content

One big thing that I think we could learn would be how to visualize data in an appealing manner (using more advanced things than just plotly, for example). It may even be useful to learn a little bit of front end development (for example, languages such as html or css) so that we can better create an environment for students that would help them use our tool in the easiest and most effective way. More specifically, it would be helpful to know how to integrate python code to an online website.