



April 14, 2024

Dr. Cynthia Pope
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Dear Dr. Pope,

I am writing to you to introduce a potential solution to the chaotic course registration process Syracuse now employs. Enclosed with this letter is the report on the results from my research which describes the reasoning to improve the current registration system and the benefits it would bring to students, staff, and the school as a whole.

As a third-year student, I have had to register for classes six times at the current moment. Due to the fact that I am in the business school, I am aware that I have a unique advantage with the skills to pick out classes. After researching how different schools on campus approach registration, there are still some students who just go along with what their advisors say; no questions asked. I believe that my solution would solve this issue, reducing stress levels across campus during course registration and the weeks leading up to it.

I appreciate you taking the time to read my report. If you have any questions about the material, feel free to contact me at jbraverm@sy.edu.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jason Braverman', with a long horizontal flourish extending to the right.

Jason Braverman

Syracuse University, Martin J. Whitman School of Management Student

Improvements to Course Registration at Syracuse University

WRT 307 M241

April 14, 2024

Jason Braverman

Abstract

This report will serve as a recommendation to Syracuse University to improve the course registration system. Course registration has been online for many years now, yet the process is still fundamentally as rudimentary as it was in the beginning. In order to collect data points, I conducted a survey sent out to the school's general populus. Also, I attempted to interview someone from each college on campus including graduate students and professors. Through this research, I found that the experience is not unique to have issues with registration, and those students that were interviewed and surveyed had thoughts to improve the system. The most recommended solution was a rework to MySlice, which is a big focus of this report. Also, I found several studies conducted at universities worldwide that provide a better solution to registration than what is currently employed at Syracuse. Therefore, I highly recommend that Syracuse University take note and investigate the development of a system of improvements to the MySlice platform to make registering for courses an easier and less stressful process for all parties involved.

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INTRODUCTION

Course registration has been around since universities began offering classes. However, now the process is seemingly more complicated than ever for students with the vast number of courses offered. The process as it is now, fundamentally is a free-for-all based on what timeslot is assigned. While the university says timeslots are based on standing, in reality there are some sophomores registering before juniors preventing them from taking classes that are a graduation requirement.

The purpose of this report is to provide evidence that students at Syracuse University could have a better experience registering for courses during their time here. This would be done by implementing changes mostly on the user interface level, but with some on the database and developer level. I, myself have been a victim of registration troubles being locked out of a necessary class moments before and during my registration time, leading to a scramble to find a replacement.

Syracuse University redid the student information platform MySlice in August of 2021 in an effort to make it more user friendly. While it was an improvement from its predecessor, more changes still need to take place. Based on interviews conducted, students are very unhappy with how the school handles registration.

To construct a report to implement a solution, steps will be put forth and followed. Firstly, an eSurvey will go out to the general student body, and a series of interviews will be conducted with at least one student from each college on campus. Additional research would then be done to see if students at other universities are satisfied with their registration process.

This project will be beneficial to the students of Syracuse University. It will address a much-needed solution to a process that students have been unhappy with for over 20 years. This

would also benefit advisors and other staff members because with the introduction of an easier way for students to register and plan courses, less stress would be seen in the weeks leading up to registration time, leading to better scores on exams, and better attendance in class. around that time. By encouraging the school to change the process, students would face less stress in the weeks leading up to registration time.

METHODS

For the quantitative research, I activated a Qualtrics survey to determine what students thought of the current course registration process. The 6-question survey was distributed across campus to 35 students. The full survey with questions can be found in Appendix 1.

Through more qualitative research conducted by interviews, the major flaws of the process came to light. I conducted interviews with students from 10 of the schools that are part of the university. They shared insight into how the university handles course registration across vastly different majors and graduation requirements. Eight of the students surveyed said they would want some aspect, or another, changed of the course registration process. The interview questions can be found in Appendix 2.

Next, I conducted interviews with an assistant professor and a graduate student. They both shared thoughts from the point of view of someone teaching, seeing their students more worked up and stressed around the registration time. This interview question can be found in Appendix 2a.

In addition to empirical research, studies published in the International Journal of Advanced Computer Science and Applications, conducted by the Department of Research and Innovation of University Malaysia Pahang were used to implement a new system of course

registration. The Kurdistan Journal of Applied Research completed a study about online registration based on students' time constraints. Also, published in the book about the Learning in the Age of Digital and Green Transition conference, a study was conducted at the Universidad de Talca (Chile) about support during registration and a new system to help students choose courses. These solutions have already been proven effective and accurate so implementing them at Syracuse will help fix the current problem.

RESULTS & ANALYSIS

In order to adequately represent the population that the Syracuse University course registration has an impact on, two main areas of research were conducted. Interviews with students from 10 schools, including Masters' students and professors. A survey was sent out to the general populus that yielded a total of 35 responses. The interview answers have a range from very happy with the process to register for classes to ready to take action against the university for lack of support and active interference.

From the data gathered, regardless of major, the same answer came up multiple times stating that the school should adjust how the registration time slots are given out and who gets priority when choosing classes. The other noticeable trend in the data, which had students split, was if advisors choose or they make a four-year plan for classes, the students either love it or hate it without a middle ground.

For the survey responses, the first three questions were about demographics to get a baseline of why the responses would vary. The first was for grade level in the university. Most people surveyed were juniors who have had experience with registration at the time of writing.

About You: What is your school year? 35 ⓘ

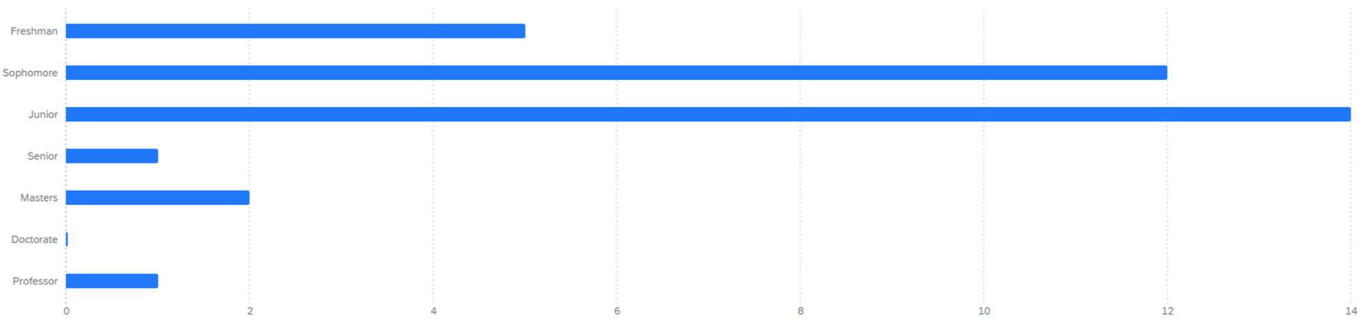


Fig 1 Survey Question 1

Next, respondents were asked their level of technological proficiency. This was asked because on occasion, the site does need specific technological knowledge to proceed, so having the data would eliminate that variable to students' troubles with registering for classes.

Rate your technological proficiency on a scale of 1 to 5, 1 being poor and 5 being excellent 35 ⓘ

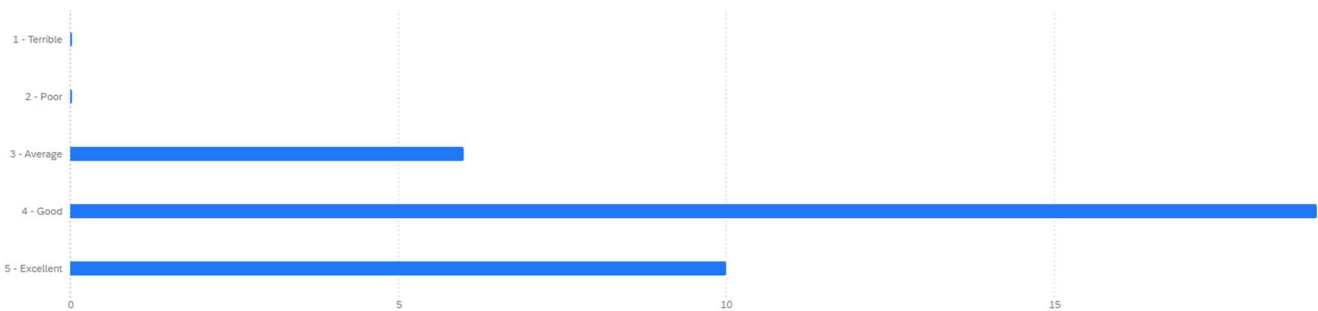


Fig 2 Survey Question 2

Finally for the demographic questions, respondents were asked what their home college is on campus.

What college is your major in? 34 ⓘ

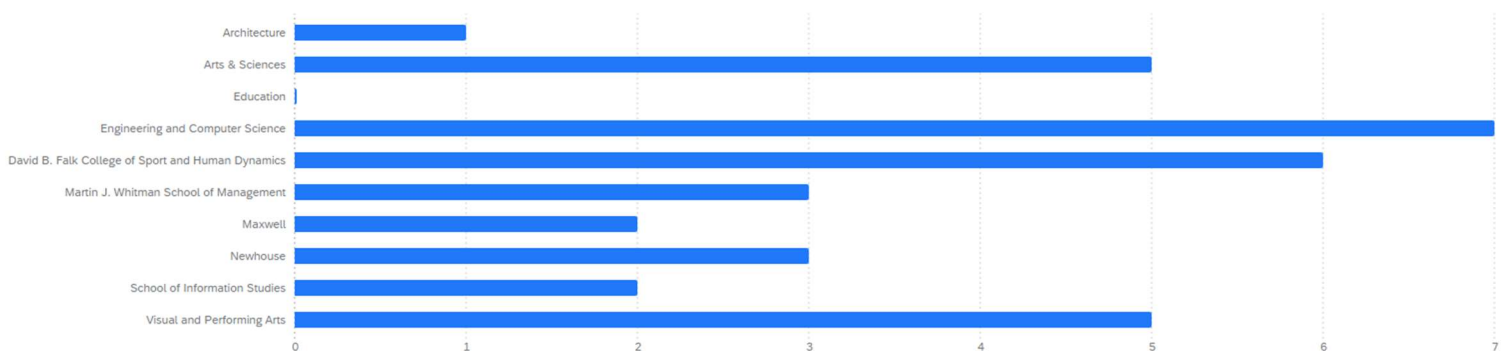


Fig 3 Survey Question 3

For the pertinent questions, respondents were asked if they are satisfied with the course registration process, would they change anything about it, and if so, what. The results speak for themselves that a combined 65% of people said they are dissatisfied with how registration is done currently.

Are you satisfied with the course registration process? 35 ①

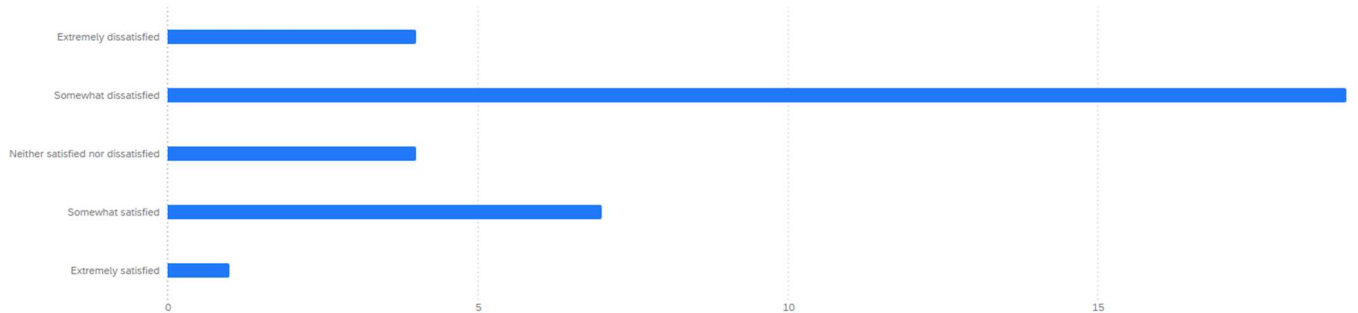


Fig 4 Survey Question 4

Do you want to see a change? 34 ①

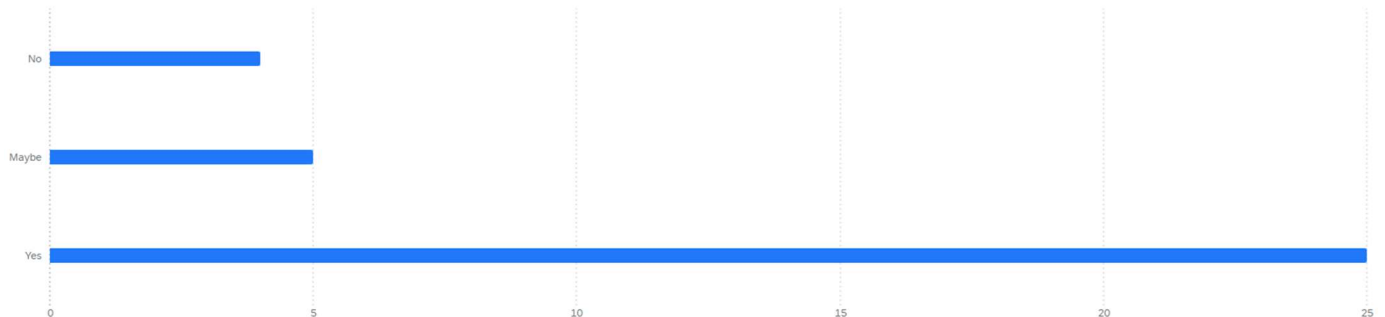


Fig 5 Survey Question 5

The overwhelming majority, 74%, of people surveyed said they would want to see something change in the course registration process.

DISCUSSION

Something that needs to be mentioned first is that the interviews and surveys only total up to 46 people, which is only 0.19% of the University's total population of around 22,000 students and 1,800 faculty. This may have bias in some way due to the innate nature of a small sample size. In order to improve the accuracy of this study, more students should be surveyed. The nature of the results does, however, indicate that the university should look for a solution to keep its student body satisfied. 65% of those surveyed were dissatisfied with the course registration process, and 74% of the total said they want to see a change implemented.

Especially in this digital age, it is especially important to have good infrastructure for online computing. This does not translate well to the current system because with the constant growth of students using the system each semester it puts an extremely heavy load on the servers causing issues for students. From the survey results, two responses included this statement "[MySlice] crashed when multiple people are using it." The reason for the increase in "physical" cloud storage is to handle the sudden increase in users using the platform. That is the only near-certain solution that would ease the stress of the students trying to get the courses they need.

Apart from unavoidable hardware limitations, the software also proves problematic for students. This comes to realization when the classes are in the shopping cart, saying it is still open, but as soon as the process button is pressed, the class is now closed and the scramble for a different class starts.

After research concluded, the improvements to registration that were recommended fell into two parts: support during registration and help in the weeks leading up to it. They include: having more database awareness and transparency to students by way of having a live chat feature to make immediate contact with an advisor should something go awry, a column to show

how many students have a particular class in their shopping cart, a different way to be able to choose classes, and expanding server capacity for a short period so the site does not go down.

Each of these solutions do come with their own challenges with a chance to outweigh the benefits. For example, purchasing more cloud servers is more expensive, but so is paying additional hours to advisors because students were kicked out of registering and lost their progress due to the website crashing. Also, there might be software limitations that would prevent live updates of when classes fill up.

The methodology to fix these issues can be found in the answers of the interviews aided by published papers from other Universities. For example, in one of the interviews with an engineering student, Mac Kastner says that he receives a list of approved classes from his advisor to choose for the next semester. Implementing this list system on a university wide level might be too difficult, due to the fact some students want to take some classes out of the normal order because of scheduling needs. The study conducted by the University of Chile, which implemented a new system to identify a critical path so students can correctly identify the courses they need to take in order to graduate on time, found that it helped students stay on track academically. This system utilizes a “complex analysis of the requirements and restrictions imposed by the career master plan” (Silvestre, et. al.). In doing this, a tree diagram is made showing the flow of classes needed that stem from the intro classes to what is available and what can be enrolled in.

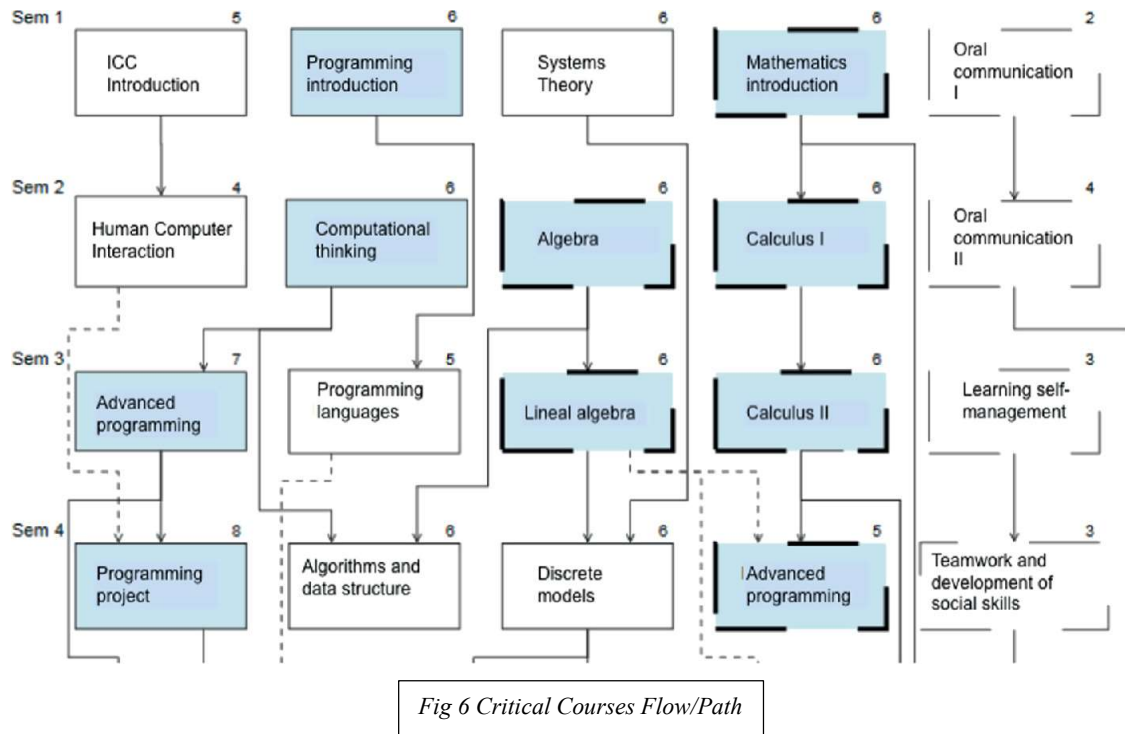


Fig 6 Critical Courses Flow/Path

While this is mainly meant for engineering classes, with enough sections, it could be possible in different majors across campus.

A different study from the University Malaysia Pahang researched a different possible solution to recommending courses to students. They made an algorithm that takes in a student's major, previous classes, and GPA to give recommendations based on performance in previous subjects. This process is called collaborative filtering which is a technique to filter content based on what a user has done prior to observing the findings and uses complex formulas to determine what to recommend.

The second experiment is conducted by comparing the recommendations of the proposed model with those of experts to validate the course recommendation accuracy of the proposed model. Results of the second experiment show that the proposed model has a 91.06% accuracy rate with an error rate of 8.94%.

(Salehudin n.d.)

The results do prove that this model is accurate, but also that students agreed and tried the recommended courses.

The Komar University of Science and Technology found that most students are looking for max credit hours above all else. The solution proposed is to have the students' available courses and sections for the coming semester as a list that can be filtered with multiple conditions concurrently. Some of these conditions are: their preferred days, times, or their friends' selected courses/sections (Faraj n.d.). Aside from the standard information of credits and type of course, the pass rate of previous semesters is included; of which can be used to sort the data.

These alternative methods to selecting courses are necessary for those students in programs who need an advisor to sign off on classes, or if they need to get back on track after probation. “[I] need to get classes approved before registering and list every credit. Never know how to do it, circle of needing to visit advisors” (Dubaniewicz). “[I] currently have an unwanted major with an unrelated advisor, with no benefit in any way. Cancels meetings, because of academic probation I have to meet regularly and can’t schedule in a good way. When I have reached out for registration help, haven’t been able to get any, and have had several problems with no response” (Johnston). Both of these students have frustrations with the current system that could be solved by implementing the solutions outlined.

Everything up to this point described is in the weeks leading up to registration time. Clearly not everyone can go first and pick out of empty classes, so the next recommended solution is to have a viewable number of how many students have the class in their shopping cart. This would mainly benefit students who are planners to make backups if the section they want is overbooked in the cart to start looking at others. This does lean into the topic of doing

another rework of the MySlice platform. Graduate student Ethan McAnally said it best that “the entire UI needs fixing, it’s unclear where everything is.” In addition, there were mentions of both making the counter for availability in classes visible in the shopping carts and modernizing MySlice.

The way the next MySlice revamp would work best is to survey the current and future (admitted) student body to see what they want to see from it. The system now lags like no tomorrow and constantly crashes under heavy load like the first day of classes and, of course, class registration. To solve these issues, the site would be reworked in a streamlined version to not have redundant areas. For instance, as of the time of writing, there are three (technically four) spots to search for a class: in the dedicated tab labeled “Class Search”, under the enrollment tab labeled the same, and under the tab to view class schedule includes a subtab that goes to class search. For the streamlined part, the tiles should be able to be fully customizable to remove the unnecessary resources like share my access and to add important links like Blackboard and Handshake. Also, a more important part of the platform is the shopping cart, which looks like it was built in 2008 using HTML. This would be a large focus for the new look.

It is also understandable that the SQL servers for the site do take a moment to link all the tables to present the information, but it gets to a level that is too unbearable. The items in the above paragraph, and MySlice’s tendency to lag when processing has been mentioned at a multitude of points in both the interview and survey. One last thing that is worth mentioning to include in the redo was encountered when searching for the examples was that the back button functions the same as the web browser, when it really should go back to the home page because it has the prominence on the page as such. Overall, this refresh would bring MySlice into the modern day with modern utility features and workflow.

A different strategy for active support for students registering is the ability to have a live chat feature to talk with an advisor should anything happen. This would work by having the software natively know the home college of the student to be able to connect. This would ease the stress of having to make an emergency appointment or wait in an advising drop-in queue, the latter happened to me two years ago. In addition to my personal experience, others have agreed. In the “what do you want changed” question of the survey there was an answer for more availability to meet with advisors. It was also brought up as a side point in an interview, but the main point was to increase the number of class sections to avoid needing to talk with an advisor. This specific solution may not be as useful with the implementation of the viewability of classes in carts, but could prove useful.

A solution to solve other stressors that are placed on students is to rethink how time slots are given out. The university now says it is randomly assigned based on class standing. This may be true, but does not account for those students that transferred in credits accelerating their academic grade level by a semester or two. The way to handle this to make sure that it is fair is to split each class by credits completed. For instance, the first day of registration would be graduate students, then seniors with more than 140 credits, seniors with 120+ credits, following the pattern until the entire class has registered. The same process would repeat for juniors, sophomores, and freshmen in that order unless otherwise specified by an advisor or administrator. The time slot scheduling issue, however, came up very frequently in both survey and interview answers of what to change about the current process. Hopefully, this solves the issue and those students with seniority can register for the classes they need in order to graduate on time.

Most students at Syracuse try to register as soon as possible, but the few who do not, are in for a surprise when no courses that fit their schedule are open. Mac Kaster said as such in an interview that it was not an enjoyable class experience to have those time essentially chosen for him. Also, a study from the Ohio State University found that “suboptimal registration behaviors are shown to have significant consequences on the likelihood of college enrollment and retention” (Gurantz), which shows that those who procrastinate are more unhappy in college.

CONCLUSION

Syracuse University has an obligation to the students to provide support for students deciding what classes to take. This goes beyond hiring advisors to have meetings with students because there are times when that is an inefficient method as noted in some of the interviews. The solution should be a primarily automated system that can assist students, while the current options become a secondary source, but still available. I would also like to stress the importance of still having traditional academic advisors to consult with because of the inherent limitations of technology scaled to an entire university.

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APPENDIX 1: Survey Questions

1. About You: What is your school year?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Masters
 - f. Doctorate
 - g. Professor
2. Rate your technological proficiency on a scale of 1 to 5, 1 being poor and 5 being excellent
 - a. 1 – Terrible
 - b. 2 – Poor
 - c. 3 – Average
 - d. 4 – Good
 - e. 5 – Excellent
3. What college is your major in?
 - a. Architecture
 - b. Arts & Science
 - c. Education
 - d. Engineering and Computer Science
 - e. David B. Falk College of Sport and Human Dynamics
 - f. Martin J. Whitman School of Management
 - g. Maxwell
 - h. Newhouse
 - i. School of Information Studies
 - j. Visual and Performing Arts
4. Are you satisfied with the course registration process?
 - a. Extremely dissatisfied
 - b. Somewhat dissatisfied
 - c. Neither satisfied nor dissatisfied
 - d. Somewhat satisfied
 - e. Extremely satisfied
5. Do you want to see a change?
 - a. No
 - b. Maybe
 - c. Yes
6. If so, what
 - a. (short answer)

APPENDIX 2: Interview Questions

1. What is it like for your major?
2. Are you happy with the process?
3. How often do you need to revise your plan during the registration process due to closed classes?
4. What would you want changed?

APPENDIX 2a: Interview Question

1. Do you notice students being more irritated during registration?