

Notes about improving CS 1136: I want to preface this by saying I gave a lot of input to Dr. Gelles about my experience, some improvements I think should take place, and things that should stay the same. I will write down everything I said to her here and more.

### **MY EXPERIENCE:**

Overall, my experience was extremely positive. I learned a lot about teaching differently depending on the student because they learn differently. Although my groups were not as social as my other lab UGTA's, I definitely feel I impacted them positively, as many of them came up to me on the last day to say goodbye and also to thank me. I also felt that even though they were not as social, they felt comfortable coming up to me and asking me for help when they needed it, because I put myself out there in the first few meetings. My experience with the other UGTA's and the graduate lab assistants were also positive. The graduate lab assistants in my section (Pragathi and Simran) were extremely nice and helpful when I had questions, or when I had to take a quick break. Harish and Nikhil were also very passionate about this job and really wanted to improve the labs for the students. The weekly meetings provided a lot of insight to what was happening in other sections and how to get through to the students. Professor Doore was also extremely passionate about the lab, as she was always asking for new ideas and feedback. She was also extremely curious about how our lab time went with the students.

### **THINGS THAT SHOULD STAY:**

The format of the lab attendance this year should definitely stay. Although it may be annoying for some students who already have a grasp on the concepts being taught in this course, it is a great opportunity for them to expand their social network and be more comfortable talking to

others. This also can help students step outside of their comfort zone. Required attendance is a good incentive to get people to come, but I believe it was not expressed on the syllabus this year. Extra credit opportunities should also stay. This year the students had the option to go to a concert and do a project for extra credit. Although these are good extra credit ideas, they were executed late, so it caused many students to not participate in them, because they could not accommodate the activities in their already busy schedule. Students often find their groove in the first few weeks, so the extra credit opportunities should be outlined in the beginning.

### **THINGS THAT WE CAN IMPROVE ON:**

The overall premise of the lab is solid, but there are a few things we can change in order to make it more enjoyable for the students. We want to make this lab as pain free as possible so we can keep the dropout rate low.

#### **1. Zybooks**

- a. Although Zybooks is a great way to immediately grade labs, it can be extremely frustrating to students. I have experienced several times where students will code something in their IDE and run it in their IDE, and it outputs what the lab wants it to. As soon as they submit it in Zybooks, they do not get full points because it is not in line with how Zybooks wants it. This is understandable because it is also a program itself, so it needs to have specific parameters, but the problem lies in how it conveys what the issue is. If the program needs to be a certain way in order to get full points, it NEEDS to be in the instructions. The instruction says there will be unit tests for certain things, but does not outline what the unit test will be. The only time the students get information about the unit test is after they submit their

code and get an error. If they get instructions in the error, this makes them frustrated, because their solution is correct, but just not how Zybooks wants it. It is also frustrating to figure out how Zybooks wants it from the error, as they do not provide proper instruction sometimes. The specificity that Zybooks wants also applies to how students code as well. Oftentimes, they want the code to be executed a certain way. But the beauty of coding is that there are 100 ways to do one thing, and we shouldn't punish the students for figuring it out on their own. I was once helping a student whose code should have worked because it was working in their IDE, but it did not work in Zybooks. After trying to change things and it still not working, I resorted to asking Pragathi for the solution to the lab. The solution turned out to be what the student was coding, but instead they were checking if something was valid, instead of invalid like Zybooks was. This was extremely frustrating for both me and the student, because I know his confidence in this class took a hit.

- b. If Zybooks is continued to be used, the UGTA's should also have access to the solutions, as this will make it easier to problem solve when Zybooks is being picky. I spent almost an hour helping that student figure out why Zybooks was taking points off, and I would've saved my time and his time if I had access to the solution from the start. I realize this might make the UGTA's job easier, but it will definitely help the students a lot more.

## 2. Correlation between Lab and Lecture

- a. I noticed that the labs were over the content that they were learning that week. There was one lab that they did not even learn until the next week. This happened

to me when I took this class 4 years ago, over the same section (files). I had to give the students that came to the lab a crash course on how files worked, and work with them a lot so they could do the lab properly. Even then, some students decided to use their one drop on that lab because they were confused on what to do. This is extremely bad practice. I know I felt hopeless and extremely frustrated when I went through this, and I already had prior knowledge of coding concepts. I can't even imagine what the students that were seeing this for the first time must have felt. This is another reason that causes students to be frustrated in this class. The labs should be over the concepts learned in the week prior; this way there is a time gap in case concepts are covered late in class. There were also times where concepts were learned in their lecture section at the end of the week, which prevented students from being proactive about their labs.

### 3. Clear Guidelines

- a. This semester was experimental with the UGTA program, so it is understandable that things were a little disorganized and all over the place. But I think having clear guidelines on what contributes to the grade of the lab (lab grades, participation/attendance, and extra credit) will set not only the students but the UGTAs up for success for the upcoming semesters. The extra credit assignments were a great idea, but were executed late in the semester, which caused many students to stress about it or not participate.