

CS 1109 — Reflections on Student Evaluations

This is a summary of my reflections on the the student evaluations for CS 1109. Overall, the class was very positively reviewed, with most students satisfied with their learning experience and appreciative of the classroom atmosphere. The aspect of the course that drew the most number of comments was the homework assignments, which were deemed to be on the harder side.

What Worked Well

Classroom Atmosphere Many students commented on the positive classroom atmosphere, noting that they felt they could ask questions without being judged. I think humor played an important role with the tone-setting here. The frequent low-stakes, problem-solving exercises, with ensuing discussions also helped build up student confidence.

Use of Real-World Examples / Historical Context I've always appreciated teachers who spent time not just on the classroom material, but also the context surrounding the material. Good to see other students appreciate this sort of thing too! I think allowing students to relax for a few minutes every now and then by exploring some side-issues helps them focus better when I return to the main programming.

Assignments that Offered a Sense of Accomplishment While many students commented on the difficulty of the homeworks (see below), I think the fact that many found the assignments “creative” and “interesting” prevented a mutiny! I think the fact that students felt like they had accomplished something when they completed the homeworks made them far more accepting of the difficulty of the assignments.

Accessibility I think introducing the supplemental, “floating” office hours after the first week, to assist students with last minute homework issues was a good idea. But probably also a double-edged sword — many put off work until the last minute knowing that they could just show up at my door to get help.

Areas for Improvement

Homework Difficulty By far, the most commented upon aspect of the course. I think there were a number of reasons for the perceived difficulty of the homeworks:

1. The homework specifications were often long and detailed, and I think many students were just overwhelmed with the amount of information that had to be processed. How can this situation be improved? On the one hand, I feel that learning to efficiently read and parse such specifications is an important skill for students to cultivate; but it shouldn't be harder than it needs to be. Maybe releasing the homework assignment as a HTML document with multiple pages, instead of a single PDF document, would improve readability?
2. Student inexperience is another factor. For most students, this was the first exposure to programming. Given that designing programs is a skill that can only be honed via practice, perhaps it is unsurprising that many found devising their own solutions hard (indeed, the rating on learning objective (6) seems to support this). Moreover, the hints and guiding questions provided in the homeworks were apparently insufficient for many students. So it appears what is needed is more “scaffolding” — one possible solution, as suggested by a student, could be to assign optional extra-credit assignments (of medium difficulty) that students can practice on before graduating to the hard stuff. But given the hard time constraints of a 6-week summer course, how feasible is this?
3. Finally, I think there is an inherent tension between assignment difficulty and appeal. It is possible to assign homeworks that can be specified with the minimum of fuss (I'm looking at you, Fibonacci sequence generator) that most students will have no problems solving. But how *engaging* is such an assignment? I think students have far more fun simulating cellular automata and cracking ciphers, but of course these aren't simple problems (to specify rigorously, or for a beginner to solve). I think this point needs to be articulated better to the students. I did discuss the issue with the class on at least one occasion, but it wouldn't

CS 1109 — Reflections on Student Evaluations

hurt to remind people about this every so often.

Pacing / Differentiated Teaching One student commented on the pace of the course being too slow, while another felt that things moved too fast. One student also mentioned how he/she would have liked more challenge problems on homework assignments (not all homeworks/labs had one). Overall, it appears I need to work on my methods to address the variable levels of skill in the class (for example, using peer teaching, including more bonus problems).

Supplementary Materials Rather than closely follow a textbook, I opted to teach from my own set of notes. I also encouraged to students to use internet resources and Matlab's built-in documentation for additional reference. Yet, it appears some students would have still preferred having a course text. Since I'm loath to making students buy \$100 textbooks they may not use again, a compromise solution could be to link to relevant sections of online tutorials and make the task of discovering supplementary material easier.

Providing Better Feedback on Assignments Though no one explicitly addressed this in written comments, the mean numeric response for question (14) makes this hard to ignore. Work with TAs in the future to establish standards for feedback on assignments.