

Midway Course Evaluation

The students were asked to answer questions using polleverywhere.com, during a Zoom lecture on November 2, 2020. The first question was multiple choice and the other three were free-style, where the other students could indicate if they agreed or disagreed. At least 31 students participated, but there were 51 students who turned in the first assignment. This relatively large number of students who did not participate probably biases the results somewhat. For the multiple choice question, the numbers are the number of students who gave that answer, according in polleverywhere. I have corrected some typos and grammatical errors in what follows. There were comments where I was unsure how to interpret them.

1. Attendance: Lectures vs. Discussion Sections

- (a) I attend lectures more often than discussion sections — 12 — 39%
- (b) I attend discussion sections more often than lectures — 0 — 0%
- (c) I attend both regularly — 19 — 61%
- (d) I do not attend either regularly — 0 — 0%

I asked this, since it seemed that more students were attending lecture than discussion sections.

2. If you attend one more often than the other, why? If you don't attend either very often, why? (make it clear in your answer which you do)

- (a) I'm a dum-dum so I need both — agree 19, disagree 0
Needing both should just mean that you are typical. I was trying to find out why there were not more who attended discussion sections.
- (b) I don't attend lectures or exercises when it is physical – agree 3, disagree 3
Only one student has contacted me after my attempts to find out if anyone was restricted from attending physical lectures due to COVID-19. Please contact me about the Zoom sessions I am running for those prevented from attending if this applies to you.
- (c) I am OK with doing the exercises at home without the exercise sessions — agree 3, disagree 3
- (d) I only attend exercise classes when I struggle with the exercises; if I can do them without a problem, I see no value in having them explained to me for two hours — agree 8, disagree 1

- (e) I'm lazy — agree 6, disagree 1
- (f) I'd rather read than discuss — agree 0, disagree 5
- (g) This questions is taking too long — agree 5, disagree 0

This comment was added as the last. I then moved on to the next question.

It appears likely that a significant number of students do not need the discussion sections, because they find the material easy, but more find it hard and thus attend.

3. Write one thing you like about the course, something which should not be changed.

- (a) I prefer online — agree 7, disagree 7
- (b) Recordings, especially for re-watching proofs — agree 17, disagree 2
- (c) The amount of physical on location lectures. They are much better then the online lectures. :) — agree 10, disagree 4
- (d) Physical was great — agree 11, disagree 3

There seems to be some disagreement about which is better. I feel that the physical works better, but it is good that the online is not terrible. Online clearly has the one advantage of being able to re-watch it.

- (e) Office hours were nice to have — agree 4, disagree 2
More students came physically near the due date for the first assignment, but most never come.
- (f) Assignments are such a good way to confirm whether or not you understand the material, and I kinda miss linear algebra (the python part) where we WEEKLY did small assignments and weekly got confirmation. — agree 8, disagree 2
- (g) We have weekly exercises one can do. No need for weekly assignments. — agree 3, disagree 0

I agree. This appears to be in response to the previous comment.

- (h) That you more thoroughly go through the theory applied before applying it. Not all courses do this properly. — agree 14, disagree 1
- (i) The example rich slides. I struggle to understand a formula without a concrete example, so having many examples is great. — agree 7, disagree 3
- (j) That weekly notes are published early to allow for proper preparation — agree 19, disagree 0
- (k) I think the pace of the lectures is good — agree 4, disagree 7

There is some disagreement, and I am guessing that those who disagree think it is too fast. However, I slowed down significantly from how I taught it two years ago, and I believe that I go more slowly than my colleague who teaches this course every other year. So it is possible that some of those who disagree think it is too slow.

- (l) I think the level of the lectures is good — agree 0, disagree 5
Same comment as above.
- (m) The slides are very nice — agree 8, disagree 2
- (n) The group assignment. It really helped me learn — agree 20, disagree 0
- (o) The assignment was fun — agree 6, disagree 4
I am glad some didn't just find it tedious.

I conclude that there were some good things about the course so far.

4. Write one thing you think should be improved in the course (maybe for next time it is taught)
 - (a) Have a slide ready to be uploaded after every physical lecture. It's hard to write notes and follow the lectures at the same time — agree 1, disagree 0
I am guessing that this student means a complete set of slides. I use the blackboard a lot and always upload the slides I do use (before the lecture, so one can see that it is not necessary to take notes on that).
 - (b) Maybe some of the proofs written on paper for us to look at, sometimes referring to some point at the top of the other blackboard is hard to follow in long theorems. — agree 4, disagree 0
I fear that students would be misled, thinking my notes are complete if they have them. They are not. Complete proofs are in the textbooks.
 - (c) Plz make exam ez plz — agree 1, disagree 4
Please study enough :-)
 - (d) I'm a dum-dum — agree 4, disagree 3
 - (e) I find this course very hard — agree 6, disagree 0
 - (f) Proofs are very hard to follow — agree 9, disagree 4
This and the previous two comments seem to be related. The mathematical content of this course is hard for many students. If you have specific problems, please come talk to me and/or join my Zoom office hours.
 - (g) Slower passing for lessons. We go over the exercises too quickly — agree 7, disagree 0
I have talked with the TAs about this. They will try to find out if it applies to both sections or not. One of the TAs has already planned to go more slowly.
 - (h) Don't give 5 minute breaks — agree 2, disagree 7
I need breaks myself, so I am glad there is not more agreement.
 - (i) Start giving hints during the course when an exam topic has been covered such that we can start preparing during the semester. — agree 14, disagree 0
This seems like a good idea. I will try to remember to do it.

- (j) Maybe start practicing proofs for the exam in the exercise sessions. — agree 9, disagree 0
 This also seems like a good idea. I have started discussing with the TAs how this could be done in practice. There are some logistical problems in physical classes during this corona period.
- (k) Clearer examples, I'm dumb — agree 14, disagree 1
 Could someone tell me which ones were not clear?
- (l) More idiot proof examples of how to use theory, am not smart — agree 15, disagree 2
 I will try to give a few more easy examples.
- (m) More options to seek help in assignments — agree 14, disagree 1
 Maybe these students did not know that they could ask the TAs or me for help, either via email, via my Zoom office hours, or in person. It was stated on the assignment that students could ask the TAs or me for help, though maybe not the range of possibilities. These assignments count some towards the grade, so help from others than the TAs or myself seems inappropriate. Quite a few students talked to or sent email to either the TAs or myself.
- (n) Oral exam on zoom is scary — agree 15, disagree 0
 They are currently predicting that it will be physical, not via Zoom. I agree that physical is better.
- (o) More physical lectures — agree 5, disagree 2
- (p) Less corona — agree 5, disagree 4
- (q) Fix the corona thing — agree 9, disagree 2
 These last two were discussed previously, in the positive comments. I should probably like the assumption that I have the power to fix the “corona thing”. :-)
- (r) Programming exercises — agree 8, disagree 4
 I do not feel that they would be appropriate for this theoretical/mathematical course.
- (s) Weekly assignments — agree 4, disagree 8
 This was also discussed previously.

This is a very hard course for students who are less mathematically inclined. It might be better if this course were moved earlier in the education, closer to when they have the discrete methods course. It is not clear if or when this will be possible, though.