

Report for CS 4102 - 001 Algorithms John Hott

Project Title: UVA Course Evaluation Spring 2020

Course Audience: **125**Responses Received: **63**Response Ratio: **50.40**%

Report Comments

Final Report

Course Questions:

Scale: 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

- 1. I had access to the course materials I needed to effectively learn remotely, including access to required textbooks, course readings, technology tools, and other materials required for class assignments and projects.
- 2. The shift to remote instruction made learning course content and/or skills more challenging.
- 3. I put forth more effort to engage in this course after the shift to remote instruction.
- 4. My life situation made it challenging to effectively learn remotely.
- 5. Comment on your experience, both the opportunities and challenges, in shifting to remote instruction in this course.

Instructor Questions:

Scale: 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

- 1. The instructor clearly communicated course changes during the transition to remote instruction.
- 2. The instructor implemented learning activities and assignments that allowed me to demonstrate understanding of the course material.
- 3. The instructor provided me useful and timely feedback on my learning.
- 4. The instructor was available to help support my learning.
- 5. The instructor created an environment that respected differences and diverse perspectives.
- 6. The instructor made all students feel welcome.
- 7. Overall, the instructor was an effective teacher.
- 8. What constructive suggestions do you have to help the instructor improve this course for future students?

Impact Questions:

Scale: 1 = Negative Impact 2 = No Impact 3 = Positive Impact

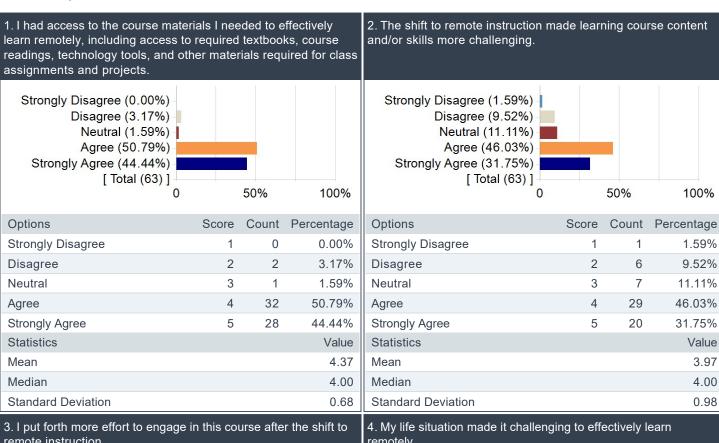
- 1. In this course, what impact did the following have on your learning after Spring Break (once your classes stopped meeting in person):
- Real-time lectures
- Recorded Lectures
- Real-time class whole-class discussions
- · Real-time small-group discussions
- Online discussion boards
- Recorded video demonstrations
- Virtual office hours

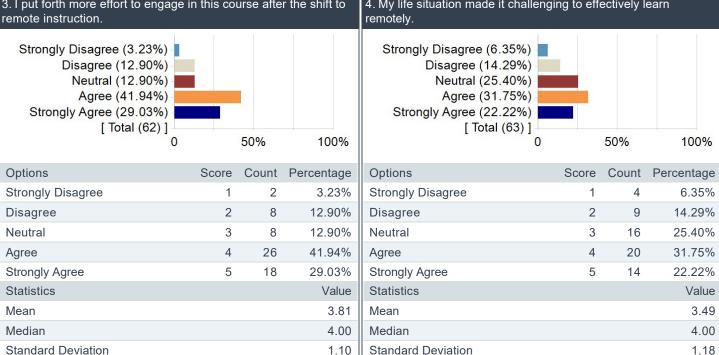
Creation Date: Wednesday, May 20, 2020

Response Rate

| Raters | student |
|----------------|---------|
| Responded | 63 |
| Invited | 125 |
| Response Ratio | 50.4% |

Course Questions





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Course

Mean values are displayed below.

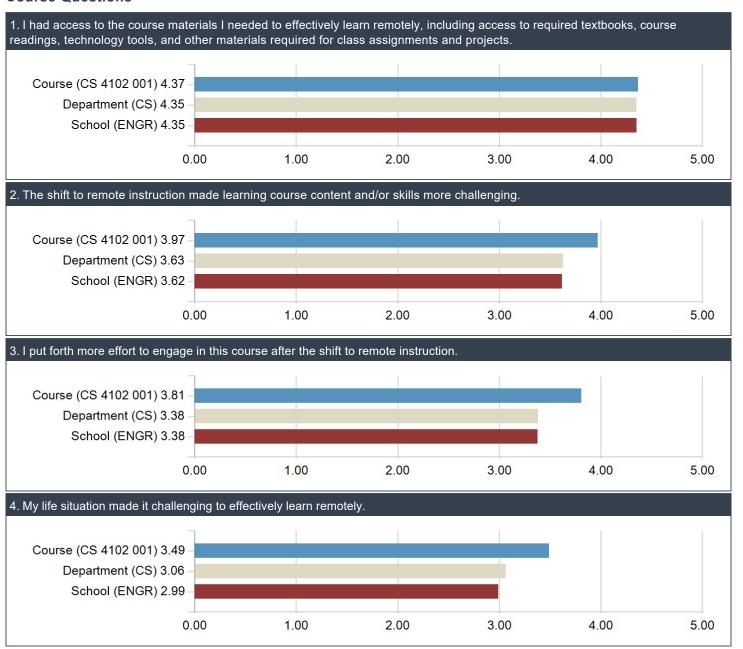
Scale 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Course Questions

| Question | Course (CS 001) | 3 4102 | Department (CS) Schoo | | School (Ef | ol (ENGR) | |
|--|--------------------|--------|-----------------------|------|-------------------|-----------|--|
| Question | Response Count | Mean | Response Count | Mean | Response Count | Mean | |
| I had access to the course materials I needed to effectively learn remotely, including access to required textbooks, course readings, technology tools, and other materials required for class assignments and projects. | 63 | 4.37 | 4197 | 4.35 | 10572 | 4.35 | |
| The shift to remote instruction made learning course content and/or skills more challenging. | 63 | 3.97 | 4221 | 3.63 | 10663 | 3.62 | |
| I put forth more effort to engage in this course after the shift to remote instruction. | 62 | 3.81 | 4214 | 3.38 | 10647 | 3.38 | |
| My life situation made it challenging to effectively learn remotely. | 63 | 3.49 | 4213 | 3.06 | 10631 | 2.99 | |

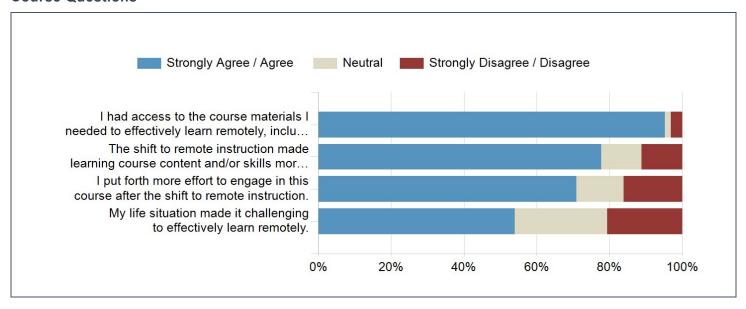
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Course Questions



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Course Questions



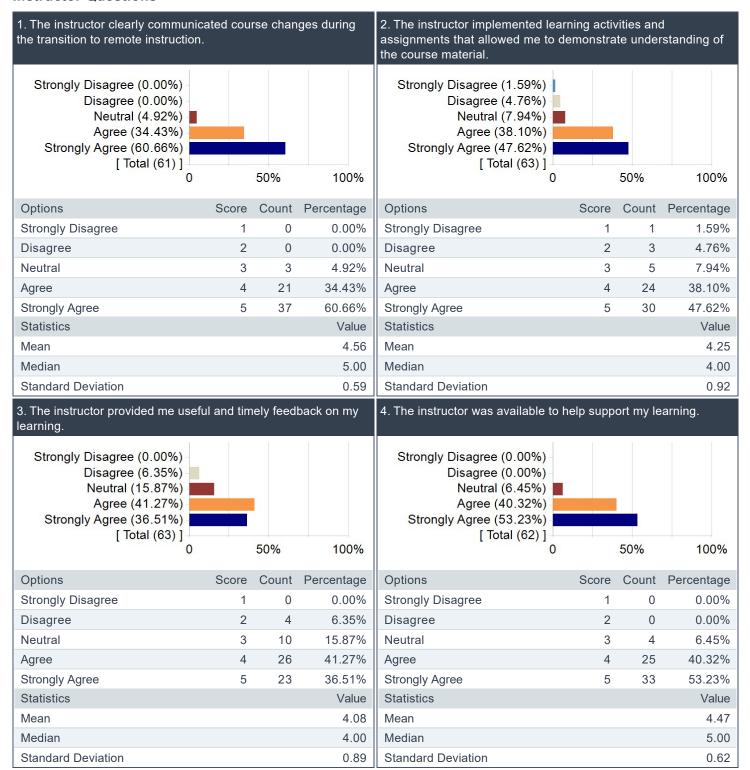
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Instructor

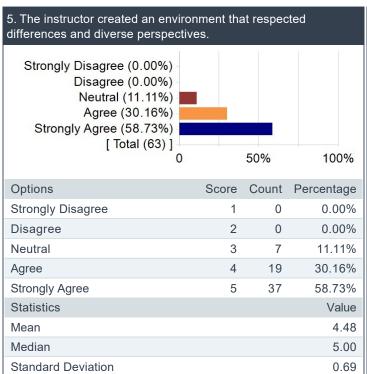
Mean values are displayed below.

Scale 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Instructor Questions



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| 6. The instructor made all studer | its feel | wel | come. | |
|---|----------|-----|-------|------------|
| Strongly Disagree (0.00%) Disagree (0.00%) Neutral (6.35%) Agree (30.16%) Strongly Agree (63.49%) [Total (63)] | | | 50% | 100% |
| Options | So | ore | Count | Percentage |
| Strongly Disagree | | 1 | 0 | 0.00% |
| Disagree | | 2 | 0 | 0.00% |
| Neutral | | 3 | 4 | 6.35% |
| Agree | | 4 | 19 | 30.16% |
| Strongly Agree | | 5 | 40 | 63.49% |
| Statistics | | | | Value |
| Mean | | | | 4.57 |
| Median | | | | 5.00 |
| Standard Deviation | | | | 0.61 |

| 7. Overall, the instructor was an effe | ective tea | cher. | |
|---|------------|-------|------------|
| Strongly Disagree (1.59%) Disagree (1.59%) Neutral (3.17%) Agree (33.33%) Strongly Agree (60.32%) [Total (63)] | - | 50% | 100% |
| Options | Score | Count | Percentage |
| Strongly Disagree | 1 | 1 | 1.59% |
| Disagree | 2 | 1 | 1.59% |
| Neutral | 3 | 2 | 3.17% |
| Agree | 4 | 21 | 33.33% |
| Strongly Agree | 5 | 38 | 60.32% |
| Statistics | | | Value |
| Mean | | | 4.49 |
| Median | | | 5.00 |
| Standard Deviation | | | 0.78 |

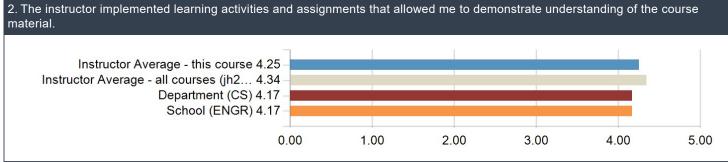
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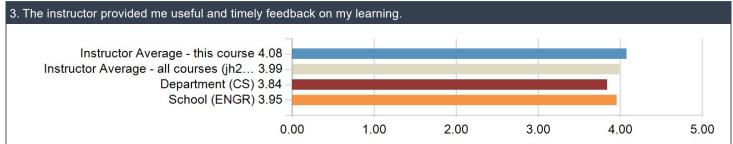
Instructor Questions

| Question | Instructor Average - this course | | Instructor Average - all courses (jh2jf John Hott) | | Departmen | t (CS) | School (El | NGR) |
|---|-------------------------------------|------|--|------|-------------------|--------|-------------------|------|
| | Response Count | Mean | Response Count | Mean | Response Count | Mean | Response Count | Mean |
| The instructor clearly communicated course changes during the transition to remote instruction. | 61 | 4.56 | 132 | 4.58 | 4221 | 4.24 | 11961 | 4.27 |
| The instructor implemented learning activities and assignments that allowed me to demonstrate understanding of the course material. | 63 | 4.25 | 134 | 4.34 | 4248 | 4.17 | 12055 | 4.17 |
| The instructor provided me useful and timely feedback on my learning. | 63 | 4.08 | 134 | 3.99 | 4261 | 3.84 | 12084 | 3.95 |
| The instructor was available to help support my learning. | 62 | 4.47 | 131 | 4.40 | 4245 | 4.09 | 12049 | 4.19 |
| The instructor created an environment that respected differences and diverse perspectives. | 63 | 4.48 | 134 | 4.42 | 4253 | 4.34 | 12072 | 4.37 |
| The instructor made all students feel welcome. | 63 | 4.57 | 134 | 4.53 | 4245 | 4.41 | 12052 | 4.42 |
| Overall, the instructor was an effective teacher. | 63 | 4.49 | 133 | 4.49 | 4237 | 4.16 | 12021 | 4.22 |

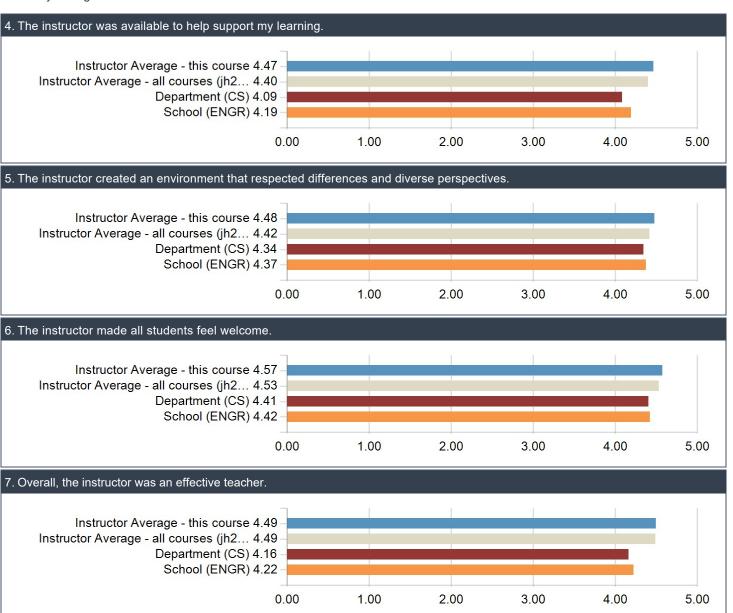
Instructor Questions





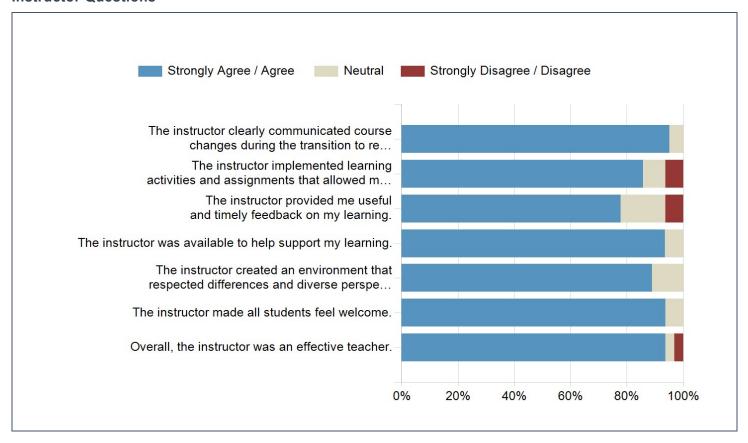


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Instructor Questions



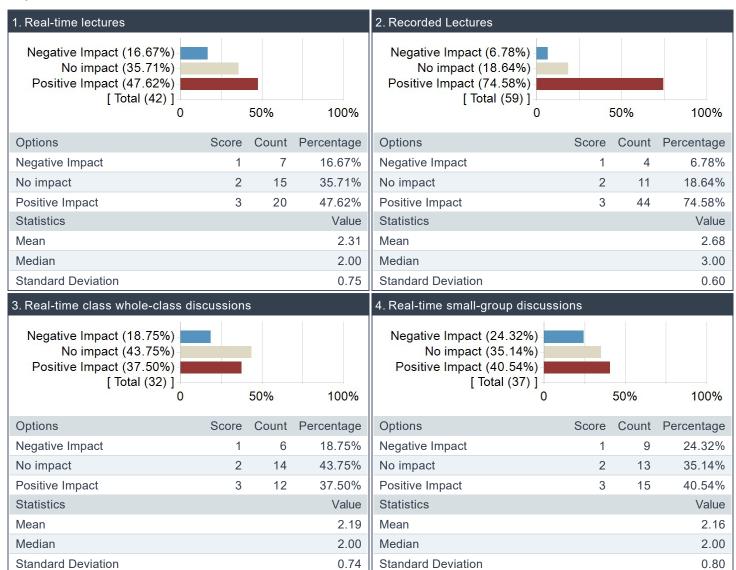
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Impact - In this course, what impact did the following have on your learning after Spring Break (once your classes stopped meeting in person):

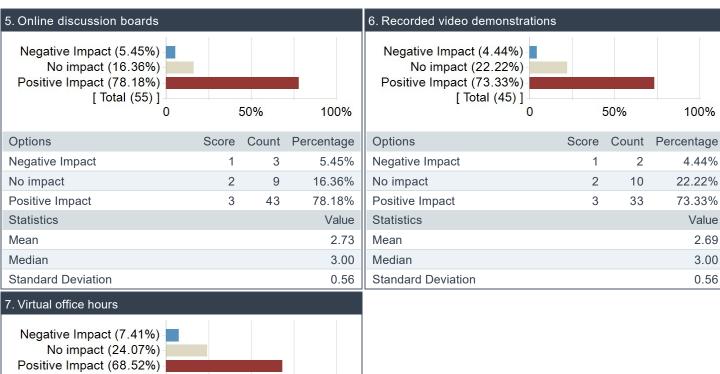
Mean values are displayed below.

Scale 3 = Positive Impact 2 = No Impact 1 = Negative Impact

Impact Questions



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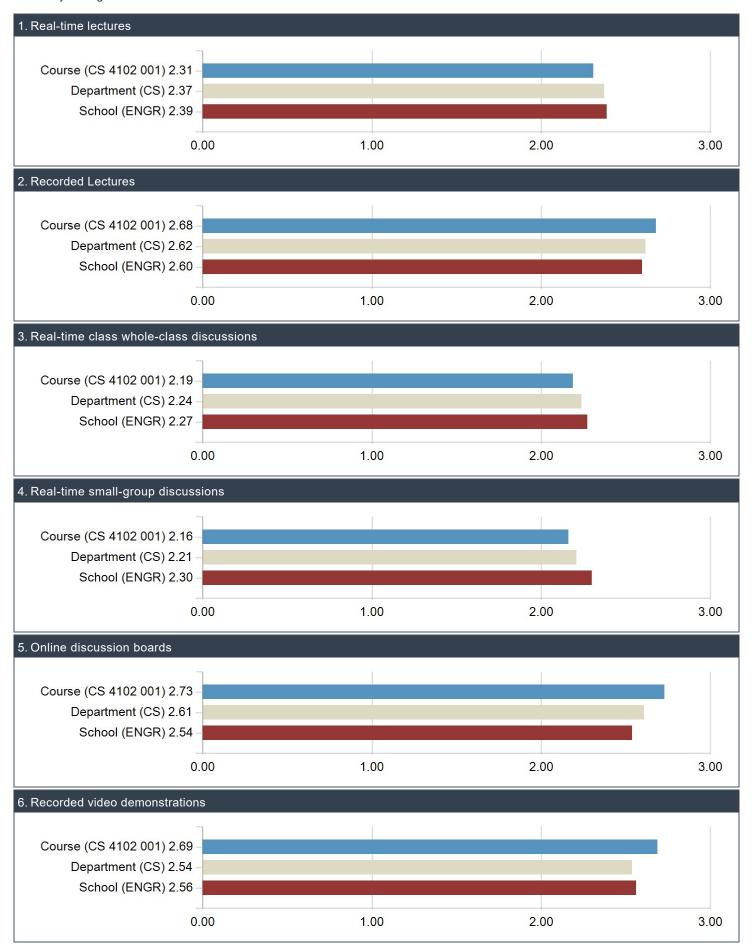
[Total (54)] 50% 100% Percentage Options Score Count **Negative Impact** 1 4 7.41% 2 No impact 13 24.07% Positive Impact 3 37 68.52% Statistics Value Mean 2.61 Median 3.00 Standard Deviation 0.63

Impact Questions

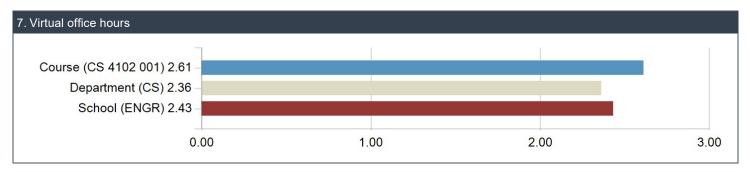
| Question | Course (CS 4102 001) | | Department (CS) | | School (ENGR) | |
|---|-------------------------|------|-------------------|------|-------------------|------|
| Question | Response Count | Mean | Response Count | Mean | Response Count | Mean |
| Real-time lectures | 42 | 2.31 | 3269 | 2.37 | 7431 | 2.39 |
| Recorded Lectures | 59 | 2.68 | 3612 | 2.62 | 8621 | 2.60 |
| Real-time class whole-class discussions | 32 | 2.19 | 2402 | 2.24 | 5879 | 2.27 |
| Real-time small-group discussions | 37 | 2.16 | 2294 | 2.21 | 5698 | 2.30 |
| Online discussion boards | 55 | 2.73 | 3345 | 2.61 | 7031 | 2.54 |
| Recorded video demonstrations | 45 | 2.69 | 2702 | 2.54 | 6250 | 2.56 |
| Virtual office hours | 54 | 2.61 | 3527 | 2.36 | 8490 | 2.43 |

Impact Questions

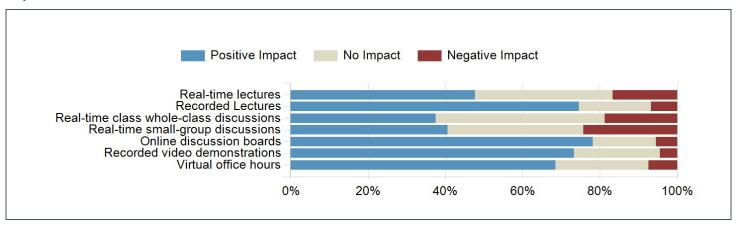
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Impact Questions



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Ranking

Course

| Hi | ghest | |
|----|--|------|
| 1 | I had access to the course materials I needed to effectively learn remotely, including access to required textbooks, course readings, technology tools, and other materials required for class assignments and projects. | 4.37 |
| 2 | The shift to remote instruction made learning course content and/or skills more challenging. | 3.97 |

| Lc | west | | | | | | |
|----|---|--|------|--|--|--|--|
| | In this course, what impact did the following have on your learning after Spring Break (once your classes stopped meeting in person): | | | | | | |
| | 1 | Real-time small-group discussions | 2.16 | | | | |
| | 2 | Real-time class whole-class discussions | 2.19 | | | | |
| 1 | 3 | Real-time lectures | 2.31 | | | | |
| | 4 | Virtual office hours | 2.61 | | | | |
| | 5 | Recorded Lectures | 2.68 | | | | |
| | 6 | Recorded video demonstrations | 2.69 | | | | |
| | 7 | Online discussion boards | 2.73 | | | | |
| 2 | My life | situation made it challenging to effectively learn remotely. | 3.49 | | | | |

Instructor

| St | rengths | |
|----|---|------|
| 1 | The instructor made all students feel welcome. | 4.57 |
| 2 | The instructor clearly communicated course changes during the transition to remote instruction. | 4.56 |
| Ne | eeds Improvement | |
| 1 | The instructor provided me useful and timely feedback on my learning. | 4.08 |
| 2 | The instructor implemented learning activities and assignments that allowed me to demonstrate understanding of the course material. | 4.25 |

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Comment on your experience, both the opportunities and challenges, in shifting to remote instruction in this course.

Comments

Biggest issue was non-live lectures, although videos helped I think in person lectures helped a lot more

This class did not change much after the shift to remote instruction. The only difference was probably that the last exam was taken at home.

The homework problems were still as difficult as ever, but I had a bit more of a comfortable place to study in, so it worked out better overall I think.

CS is a great field to be in for online transitions. It wasn't fun, but I learned well and the instructors made it a fine transition.

Trying to go to office hours remotely was a huge pain. I think the way the instructors implemented discord was a step in the right direction. This doesn't mean that it was perfect though. The wait time for getting to talk to a TA was long and the amount of help they could do without being face to face was limited.

The semester was deeply unpleasant from start to finish, and it only got worse once we moved to online instruction. Every other course I took made accommodations for the shift to online and it felt like there was no leeway in this class. The course load did not lighten in any meaningful ways except changing the format of the homeworks to take just as long as before except in a new form. I appreciate the teachers giving extensions to homeworks 6 and 8 (homework 9 still only had 7 days to complete and homework 7 we only had 6).

Homeworks and collaboration became much harder after the change to online. Office hours on discord were a great help.

As I have said with every other course evaluation, there is a major downside of doing work at home than doing work at the University. It was challenging being home with my family and quite frankly, distracting as well.

Personal Comment

I think the professors adapted admirably to remote instruction. It was clear that every logistical decision was made with a lot of consideration (and in consultation with TAs, who could give a student perspective). Due to the nature of CS courses (many of which already recorded lectures, even before the shift to remote instruction), the transition to remote lecturing was simple. But they adapted office hours and exams to suit the online environment, and have been generous and adaptable about homework modifications and extensions.

It was difficult but Professor Hott and Horton were incredible.

The feeling of disconnection often leads to a lack of motivation especially when the course already isn't my strong—suit and rigor of the material remains the same. For many of the written assignments, I felt that office hours were practically necessary to attend in order to be put on the right track which disadvantages students with other courses and time commitments or less work—conducive home environments.

I found it helpful to watch pre—recorded lectures on my own time. Although the professors posted recordings of their lectures before the transition, the shift to remote learning forced me to watch lectures online. I could rewind parts I did not initially grasp, slow parts down, or speed some parts up, which was extremely beneficial to my understanding of the material.

However, online TA OH was significantly worse than in–person TA OH. The Discord structure appears inherently reasonable and effective. However, in reality, I found myself waiting for TAs over three hours at a time. A single TA would handle a single student for 30–45 minutes. Or, if the TAs began splitting students into different meeting rooms based on the question they needed help with, it would become hectic and chaotic. I cannot think of solutions to these issues though, as I believe these issues arise simply from OH not being held in–person.

The instructors were absolutely wonderful. They genuinely cared about the students' well being during the transition. They were highly receptive to students' concerns, and did not immediately dismiss concerns. They addressed all concerns that arose and made accommodations/changes accordingly.

It was very difficult to learn algorithms from home because it's difficult to have the focus and attention to truly devote yourself to challenging material like this one. Effectively there's no more quiet spaces because libraries are closed, and there's always family at home; this makes it hard to stay focused on the recorded lectures and such. Homeworks also take a lot more time because one cannot whiteboard and do groupwork like in person anymore and it's a lot harder to be as productive doing algorithms with a group from home because communication gets difficult when internet breaks up, the mic doesn't work as expected, or just talk about some topics without being able to physically point and write in real time.

Discord was a good option for office hours. OH hours may have needed to be modified because there would often be 20 students and only 1 TA

Good experience, professors were very helpful in allowing for extra time to ensure nobody was falling behind or struggling due to not being able to receive help. Piazza was also extremely helpful and served as a good way to ask questions that normally would have been in class.

I think the biggest challenge is that I cannot get the help I need from the instructors and the TAs in time.

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Class become much harder with the shift online, and though the teacher's were very nice, it was just hard to understand the content to the best of my ability. This may have been a personal learning issue, but I think the overall performance and understanding on campus would have been higher.

The instructors were amazing in the shift to remote learning. They made themselves available all the time and were very effective at communicating what we were supposed to be doing and learning and when. They also were great with adjusting the course a little bit and making our lives just a little bit easier.

I personally did not face any challenges after the online transition. The recorded lectures were great as much as the online office hours.

I do not live in the Eastern time zone, so recorded lectures were critical for me

Good

I found it really hard to collaborate with others, due to the strict collaboration policy and not being able to "invite" myself into a group for a homework set. I also missed just going to OH, escpailly when I was really confused on a problem just listening in on other student's questions about a problem to the TA's really helped me understand the material before this whole thing happened, and it made it more challenging to figure things out.

Personal Comment

it was challenging to get my brain to THINK at home

Professor Hott and Horton both handled the situation very well and tried to make the move to online learning the smoothest it could be.

Great job on the quick transition to online learning, thank you to both professors

I would have appreciated live classes at the original class times as opposed to uploaded videos, but I recognize that the change to remote was a struggle for all of us and maybe that expectation was unrealistic.

I really suffered from not being able to go to physical office hours. Since I only really ever worked with one other person, when we didn't understand something, it felt very isolating. Despite the humid atmosphere of Rice 442, there was always a positive environment of everyone collaborating in the same place, even though they were working within their own smaller groups.

Office hours became less helpful that they weren't in person.

Office hour was very challenging but it worked out at the end. Homework extension was necessary and was given in generous manner.

What constructive suggestions do you have to help the instructor John Hott improve this course for future students?

Comments

No issues with algo, I think that all assignments were reasonably difficult and a lot of thought went into preparing the course information.

Professor Hott was an effective lecturer and made this course worthwhile. He explained concepts clearly and provided feedback to students.

Maybe make the homework problems a little easier.

Buy a leaf mower

Homeworks should do more to mimic the lecture review questions and the questions on the final exam because those make the student actually apply the concepts and help them to understand where they might be confused, compared to the current homeworks where every question is just a riddle where you figure out the one trick to each question and you've finished the homework. In a *computer science* course learning about optimizations why is only one—third of the class is developing our own optimized code? Homework 3 felt like the only time anything practical was learned because we were shown a coding algorithm and we were shown how to problem solve and improve it. I wish more of the course had been like that instead of rote memorization of run—times and logic problems.

I think Hott is a great lecturer who clearly cares about his students and their success in his course. He knows that Algorithms is a difficult course and he was very understanding of student's situation after the transition to online.

Keep doing what you're doing! Best CS professor

I think this course in general is a little out of touch with how programming occurs in the real world, which is more collaborative and building on the backs of code that is already available as opposed to trying to reinvent the wheel. What CS Profs. often call academic dishonesty is what is called resourcefulness in the business world. At the undergraduate level, much of the content is unnecessarily difficult and does not reflect what real world jobs in computer science, data science, or software development may look like, although this may prepare students who choose this route to be better equipped for grad school. It's almost as if different tracks should be electable, which is nice to see that the Cybersecurity focus is a thing.

Professor Hott really cares about his students and it truly shows. I know that he was being as accommodating as possible, and he

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was doing his absolute best to help us. I hated that it was algorithms, but honestly having Professor Hott made it better (not that the class was enjoyable). I don't know that there are things to improve on for the future, because he was doing as much as he possible could, though discord really sucks and office hours was so terrible (with TA's. zoom worked better). I really am glad to have been done with this class, though the final exam completely shafted me and I regret trying to do the letter grade because the final absolutely was so so terrible.

The main way to stabilize one's grade in this course is through extra credit since there are no corrections on homeworks and exams. It is a better philosophy to allow students to demonstrate their knowledge even later in the course, since the standard that "exams and homeworks are the absolute metric to determine if a student has learned a topic or not" is arbitrary and counterproductive. Professor Mark Sherriff has a system that allows students to retake the parts of quizzes they missed at the end of the course to allow students to show while they did not master the content at some point in the course, they have mastered it now. This incentivizes learning beyond the time period in which we're taught the material, which I believe is more useful. I understand this might be difficult to implement for Algo, but I think every course should make some attempt at doing this in order to reward learning and not penalize students for not learning the material as soon as they're taught it.

Also I've heard some students bring up issues with the extra credit system that I agreed with and I felt should be addressed, yet the instructors didn't seriously consider it. In theory, it's a great concept to allow submissions for extra credit as it shows students are going above and beyond to engage with the course. I really valued and appreciated that the instructors thought of this and implemented this policy especially since there's no direct way to make up lost points on homeworks and exam, this would allow students to put in the work to make those points up. However, it's unfair to expect students to submit extra credit within a period of it being released; not every student has an equivalent lifestyle. Some students have work, or are taking more credits, or have other unavoidable commitments compared to their peers. It's not fair that some students, who have more time on their hands, can quickly submit an extra credit but for others who might not have some time for a few weeks to truly flesh out and give an honest response to be penalized. The only reason I bring this up is because extra credit has the power to bring up a student's grade by a whole letter grade, so I think that policy should be changed a little to be more fair for everyone.

My last suggestion is that while its great that we review examples in class, I was hoping that the instructors would release more guidelines and advice on writing proofs. A lot of the challenge in this course was just figuring out how to do a proper write up, which is something we never really discussed in lecture. It would be helpful to see that we should approach write—ups in generalized steps and what we should make sure to tackle. For example, for Greedy algorithms, what are the ways to prove optimal substructure or the optimality of greedy choice property? What should we include in proving dynamic programming questions? That would go a long way in helping students focus on the algorithms more.

But other than those three suggestions, I think this course is structure really well and I had a great semester! I learned a lot of really useful topics, and I think it was a great course. Also, I really appreciated the sincerity of the professors to help students in this difficult time. Thank you!

You're doing great!

He's one of the most understanding professors I've had. Very nice though the final was rough!

I loved Algorithms! I had heard mostly negative things about it before which confuses me. Yeah, it's a hard class but the instructors make learning it so much easier because they have clearly taught it so much before. It would definitely be hard to find another class in UVA CS that has such amazing professors who clearly know so much about the material and communicate it in such an effective way.

The final exam (online) was long, and I believe that students should get a 3h completion period for similar exams.

Very Good

In regards to the online format, I wish the lectures were posted beginning of the week and all necessary things assigned in a more checklist format.

I also found the problem set solutions helpful. However I just wish there were more examples and resources to supplement working on the homework. Because the problem sets were hard and I had a hard time proving things especially since there wasn't a lot of examples and solutions. Even Cormen didn't have answers at the back of the book.

I felt like my overall knowledge of the course is not represented by my grade due to nitpicky points lost on problem sets and coding homeworkds that add up to lower overall grade. Instead, I could write full essays on the topics on this class and the implications, demonstrating mastery in a way that is more representative than explaining in a proof and getting docked points.

The homework assignments in this class (especially the written ones) take a very long time to do correctly. Considering, we only every had one week to complete these assignments, it sometimes felt like a tall order. However, once we submitted those homeworks, the time we would have to wait in order to receive our grades was unfairly long. This caused stress for me when I was deciding on whether or not to take this class for a letter grade. In addition, I felt that the final exam was strangely difficult and that I was not prepared for it even though I did all of the homeworks and studied.

Whenever people ask me about my experience in CS 4102, my first response is "Professor Hott is a really fair instructor". Thank you Professor for listening to the needs of students and being very supportive during the online transition. I really appreciate how you have gone above and beyond to make this class a wonderful experience for your students, despite going through a hard time yourself. Thanks again

Maybe give more problems with less difficulty? I think having to spends hours and hours on a singular problem doesn't contribute a

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lot to learning from the problems. Most of the problems in the HW required a key insight, and the time spent to gain that insight could be better spent by attempting to solve simpler but more numerous problems. I think the class–based questions while "easy" did help my understanding of the material more than the problems.

I think this course is well—structured, and I greatly appreciate all your time and effort that has gone into making decisions on collaboration and late policy. Thank you so much for a great semester!

 $More\ comprehensive\ homeworks-dealing\ withe\ more\ the\ lecture\ review\ questions\ in\ homeworks,\ which\ really\ helped\ me$

None, 100/100 favorite course I took this semester.

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