Spring 2022 Engineering Instructor Report for SP2022.E81.CSE.468T.01 - Introduction to Quantum Computing (Ron Cytron)

Project Title: **Spring 2022 Course Evaluations - Danforth Campus**

Courses Audience: **85**
Responses Received: **82**
Response Ratio: **96.47%**

Report Comments

Welcome to your Instructor Report for WashU Course Evaluations. Below you will find response data from the specified course section. Responses to personalized questions appear at the bottom of the report.

The intention of this report is to provide feedback, and also to prompt improvement in areas that may be lacking. This report is accessible to appropriate department level and school level users, as determined by your school. We appreciate your dedication to our learning community at Washington University.

If you have questions about this report, please contact evals@wustl.edu

Creation Date: **Wednesday, May 18, 2022**

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Course Administration

Was a course syllabus or a course information sheet distributed or available online?

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Options	Count	Percentage
Yes	70	94.59%
No	4	5.41%

Did the syllabus explain the content and administration of the course (e.g., office hours, grading)?

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Options	Count	Percentage
Yes	69	94.52%
No	4	5.48%

Early in the semester, did your professor explain the expectations for academic integrity?

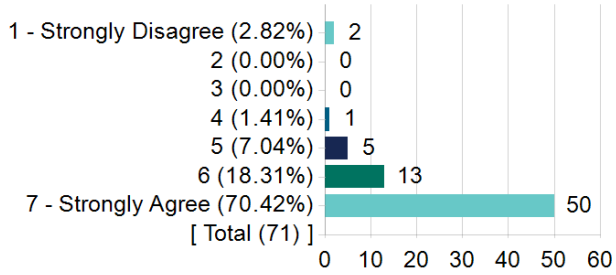
Early in the semester, did your professor explain the expectations for academic integrity?

Options	Count	Percentage
Yes	73	100.00%
No	0	0.00%

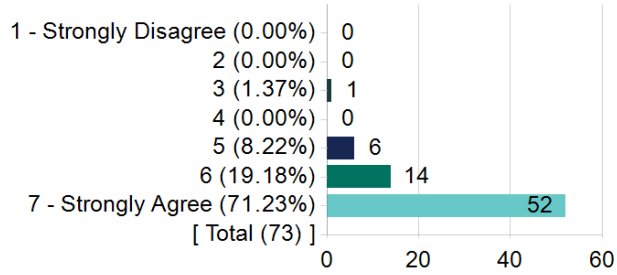
Rating Scale Responses

Question	Subject			
	Response Count	Mean	Standard Deviation	Median
In retrospect, the syllabus was an accurate reflection of how the course was actually taught.	71	6.46	1.16	7.00
The course matched the course catalog description.	73	6.59	0.76	7.00

1. In retrospect, the syllabus was an accurate reflection of how the course was actually taught.



2. The course matched the course catalog description.



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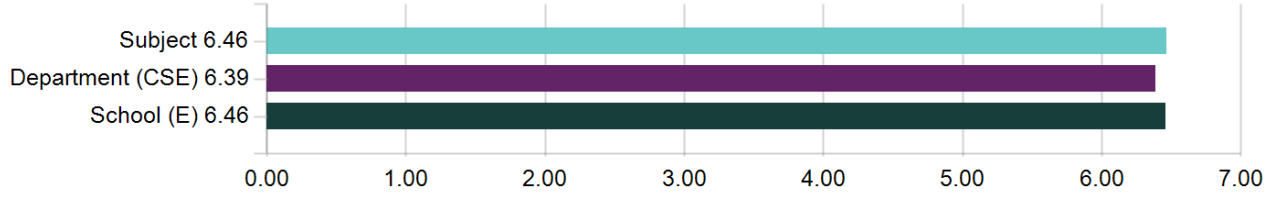

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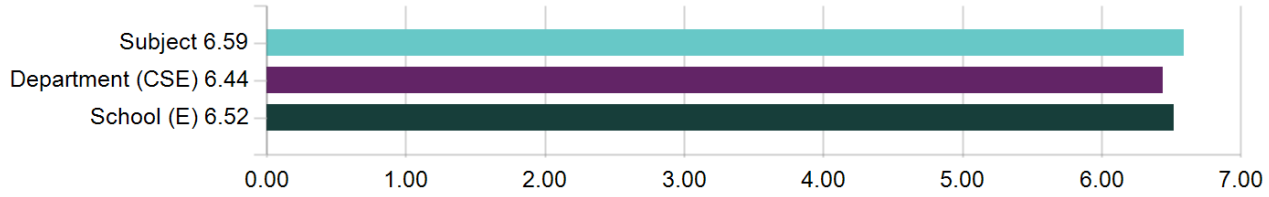

Please elaborate if you felt the course did not match the course catalog description.

Comments
I thought the class would be more about how quantum computers actually worked rather than just straight theory based on the description.
probably could've been more clear about the true nature of the course
Some of the slides are not uploaded. It is purposed for ensuring the attendance, but this makes a little bit confusion when final reviewing.

Please rate how well Ron Cytron promoted an inclusive learning environment with regard to the diversity of student personal backgrounds and identities.

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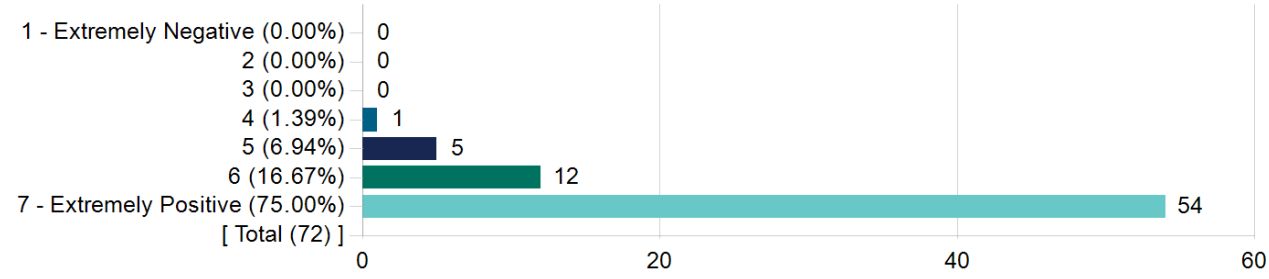
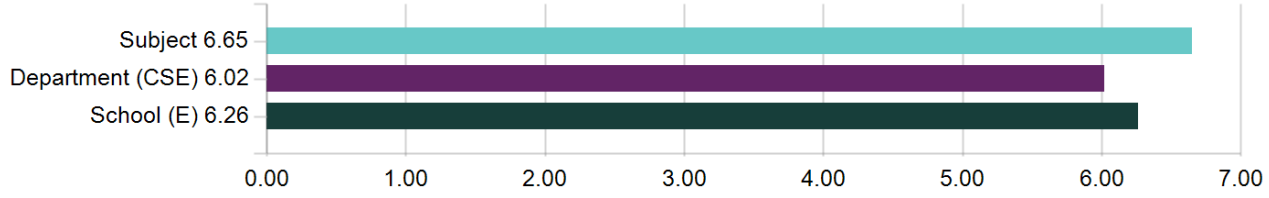


Statistics	Value
Response Count	72
Mean	6.65
Median	7.00
Standard Deviation	0.67



Where relevant, please give specific examples to explain your answer above.

Comments
Wore a mask at a request of a few students.
He just wanted the class to learn the material. Not really sure how to answer this question.
He was kind to everyone
Dr. Cytron is really nice and open to any questions you are asking.
This is one of the best courses I took at WashU! Professor Cytron was very positive, displaying a passion for teaching, Engaging! And one of the few professors who really care and want students to understand the material! He would put in all the effort to answer all questions on piazza and in class! He is very patient and would happily re–explain and provide many examples to make sure we understand the material!
Use code examples to show how it works
Professor Cytron always made sure his students were comfortable. Most notably to me was with masks he made sure every student was OK with him being maskless, and continued to mask when some poeple said they were uncomfortable.
Professor Cytron made sure anyone felt welcome to ask a question or come to office hours and promoted an inclusive learning environment.
This class is really well arranged. The class includes games, coding, and challenging assignments. It really gives me a clear view of the contents.

Instructor Evaluation

Overall rating for teaching quality of Ron Cytron.

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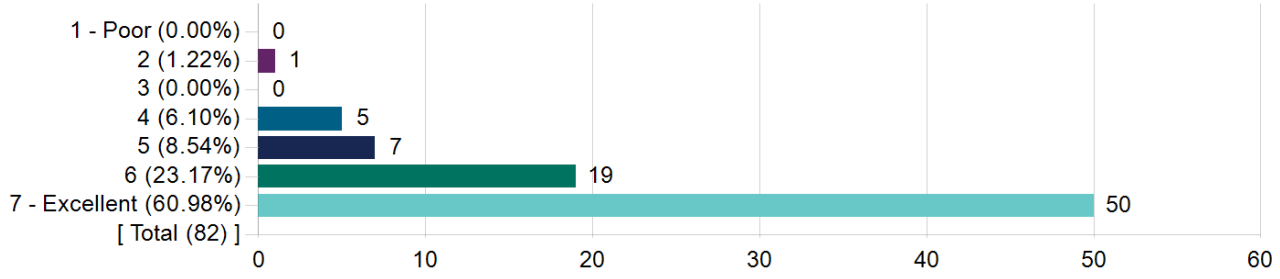
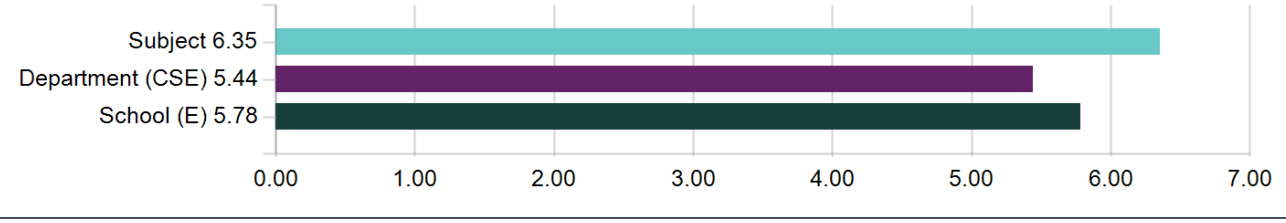


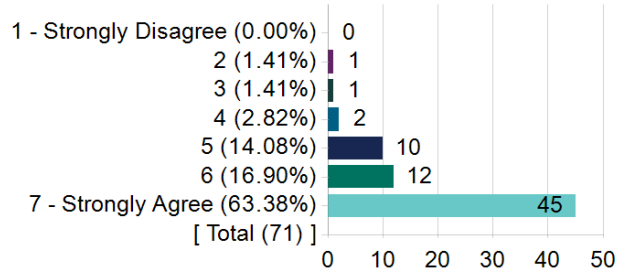
Statistics	Value
Response Count	82
Mean	6.35
Median	7.00
Standard Deviation	1.01



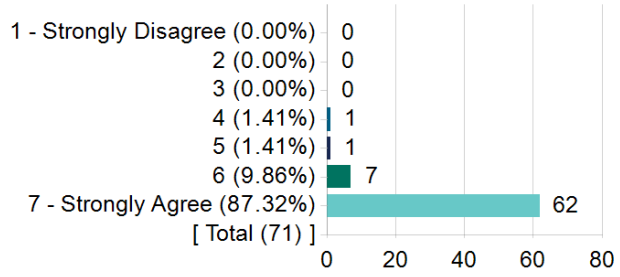
Rating Scale Responses for Ron Cytron

Question	Subject			
	Response Count	Mean	Standard Deviation	Median
The instructor made the course interesting.	71	6.34	1.07	7.00
The instructor was enthusiastic about the course.	71	6.83	0.51	7.00
The material was covered at a reasonable pace.	70	6.06	1.05	6.00
The instructor was available to answer questions (through office hours, email, etc.).	71	6.61	0.78	7.00
The instructor was well-organized and prepared for class.	71	6.55	0.82	7.00
The instructor explained the course material so that you could understand it.	71	5.90	1.34	6.00

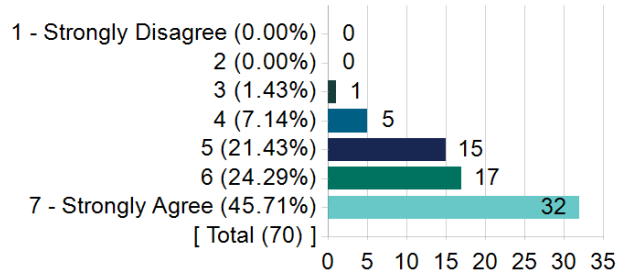
1. The instructor made the course interesting.



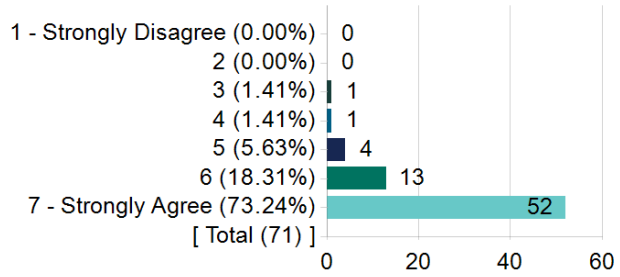
2. The instructor was enthusiastic about the course.



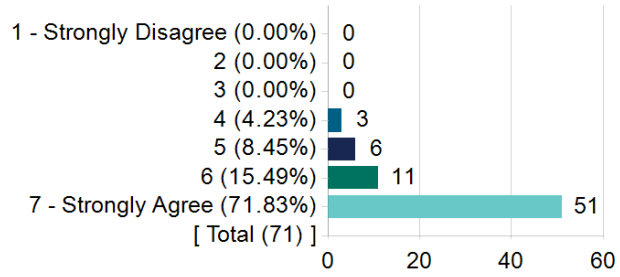
3. The material was covered at a reasonable pace.



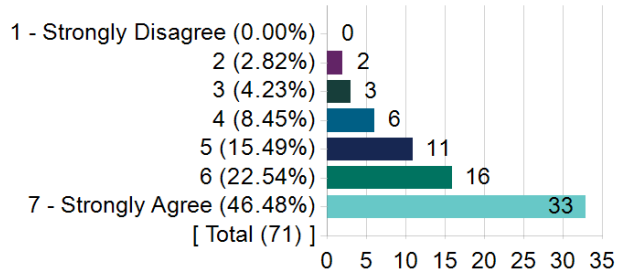
4. The instructor was available to answer questions (through office hours, email, etc.).



5. The instructor was well-organized and prepared for class.



6. The instructor explained the course material so that you could understand it.



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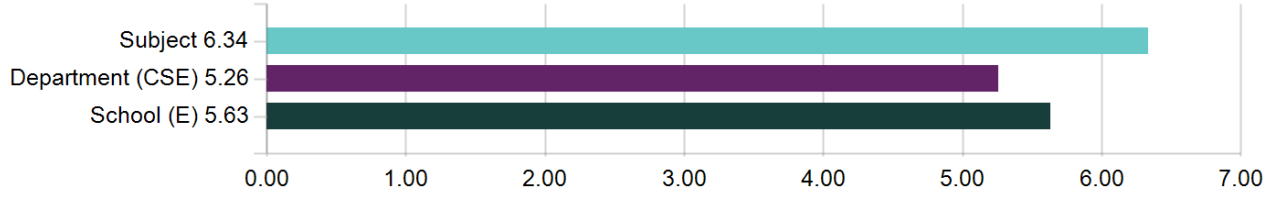
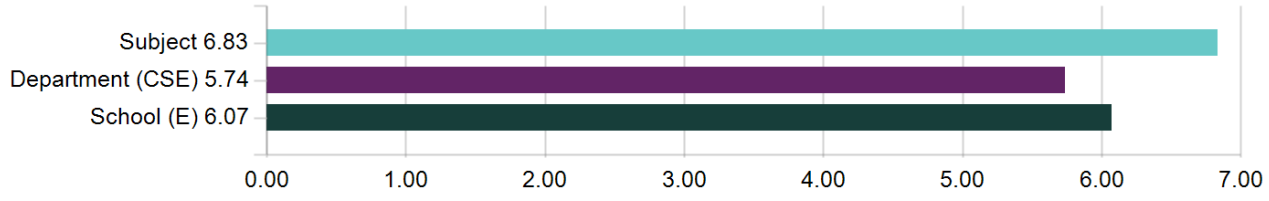
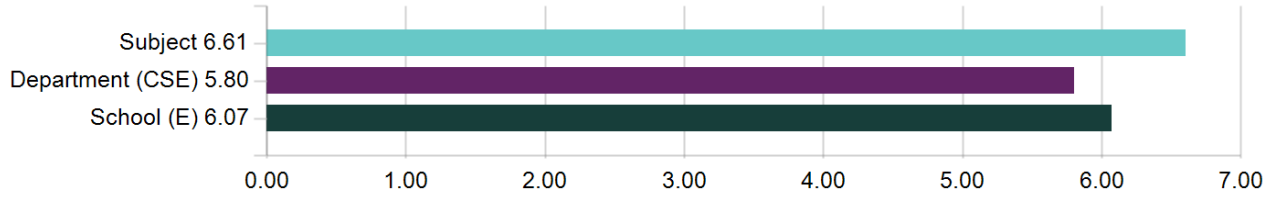


2. The instructor was enthusiastic about the course.



3. The material was covered at a reasonable pace.

4. The instructor was available to answer questions (through office hours, email, etc.).



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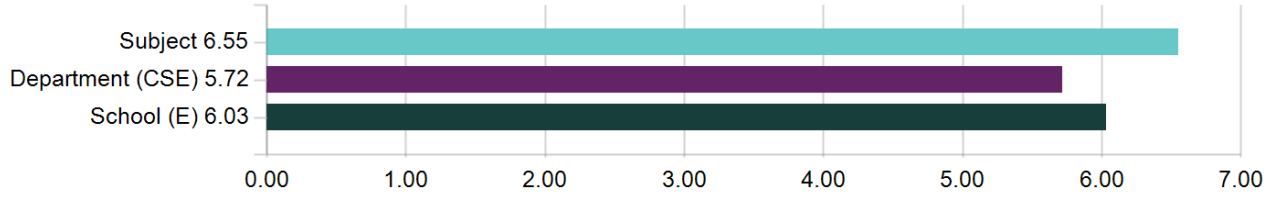

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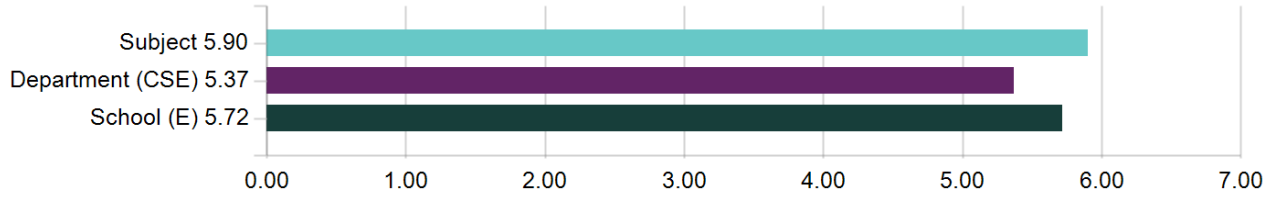

Please elaborate if you felt the material was not covered at a reasonable pace.

Comments
The pace felt a little fast at the beginning, but that could also be because the material was so foreign as it actually felt a little too slow after the midterm, maybe even it out a bit across the semester
Some of the math in later lectures (after spring break) was covered pretty quickly.
I feel like in the beginning of the semester, the material was covered extremely fast. Prof. Cytron then slowed down (after feedback). However, post midterm, it feels like this material is a lot more complicated and could use more time to digest. It feels a little crammed— he could have taken out 2 or 3 lectures and gone over stuff like DJ algorithm in greater detail/explanation.
Early semester was a bit too heavy on the homework
There were some topics that were a very small part of the course that I felt weren't given enough time to fully understand before moving onto the next one. Nothing that was a core part of the course, but things that I was left feeling like there was something unexplored.
I wish we had spent more time learning the algorithms.
Especially after spring break, things moved really really quickly and I feel like I didn't understand any of those topics as much as I did for the pre–break topics
Not sure if there's much to be done since I do think the material was spread out well, but I found that I wasn't really understanding concepts until after we had already moved on from them.
The course is somewhat fast paced (in terms of homework) in the first half of the class, but I feel like there should be even more homework on the latter part since from my experience, quantum algorithms are best understood by working through examples in details. But I don't mean that we should sacrifice topics for more homework
The lectures towards the second half of the semester were a bit rushed. However, I am glad that we got to cover the additional material.
I felt that the course was very front heavy. This was explained why it was done this way, but I wish maybe we spent a little more time on the fundamentals and then maybe cut out one algorithm or two at the end. The other thing is that I think it would be helpful to have slides for the final parts of the course. I found the slides so beneficial because often I would not get something the first time in class and I needed to process it in a different way, so I would go back and look at the slides.
It may have been a little fast paced at the beginning but overall, I think it was reasonably paced.
The first semester went by a little fast, but was slowed down in the second semester and felt a lot better.
it felt a little slow at the beggining and fast at the end. but also i understand a lot of people struggled with the early stuff so it makes sense

Course Materials and Assignments

Overall rating of course content.

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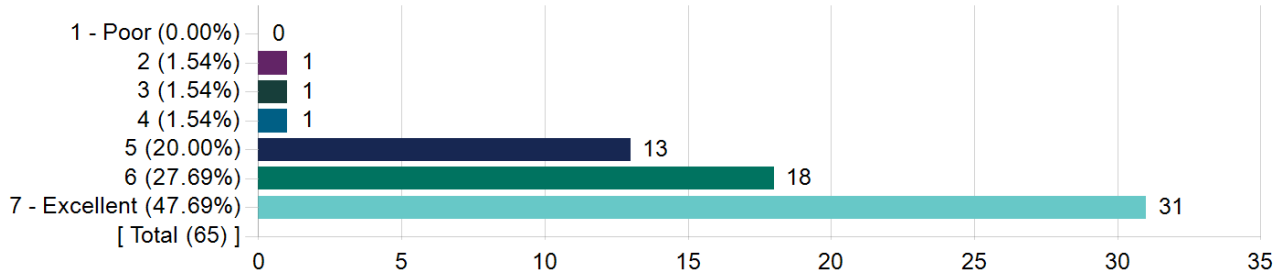
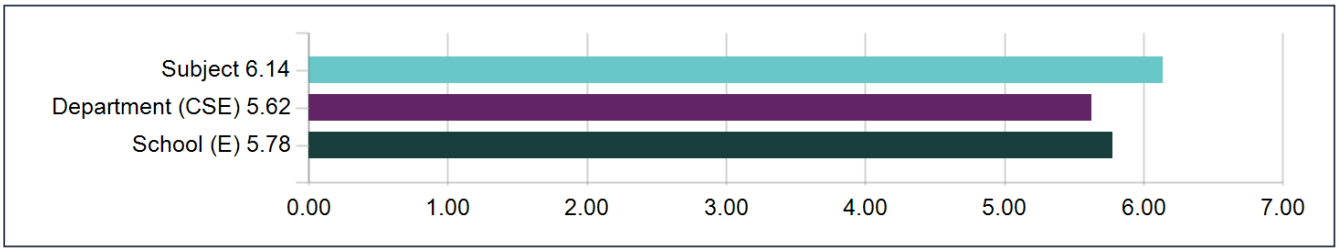


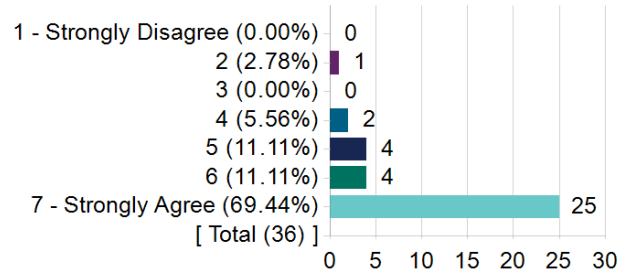
Statistics	Value
Response Count	65
Mean	6.14
Median	6.00
Standard Deviation	1.06



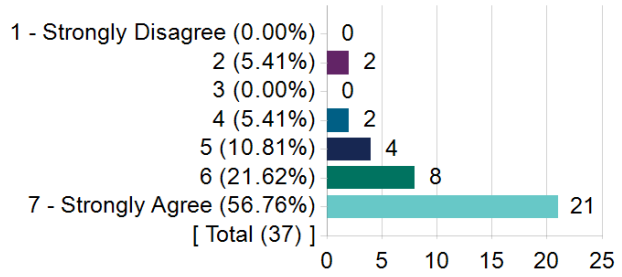
Rating Scale Responses

Question	Subject			
	Response Count	Mean	Standard Deviation	Median
Textbooks/readings complemented the lectures.	36	6.36	1.17	7.00
Textbooks/readings were useful.	37	6.14	1.34	7.00
Assigned homeworks were helpful and relevant to the course.	68	6.72	0.59	7.00
There was reasonable time to complete assignments.	69	5.96	1.27	6.00
Assignments were returned within a reasonable period of time.	69	6.64	0.80	7.00
Comments on graded work were helpful.	65	5.48	1.68	6.00
Labs were an effective supplement to the course.	45	6.40	1.14	7.00
The course material drew upon real world applications.	66	6.05	1.32	7.00

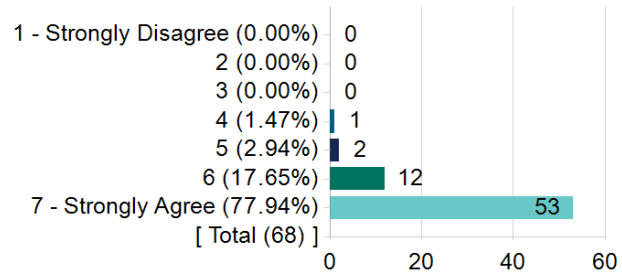
1. Textbooks/readings complemented the lectures.



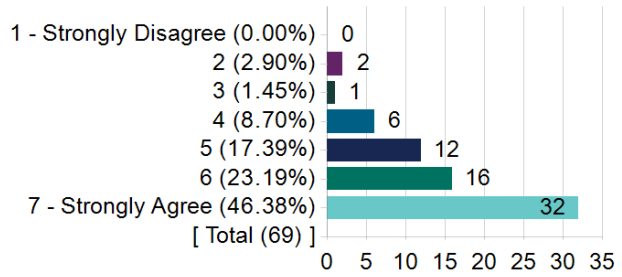
2. Textbooks/readings were useful.



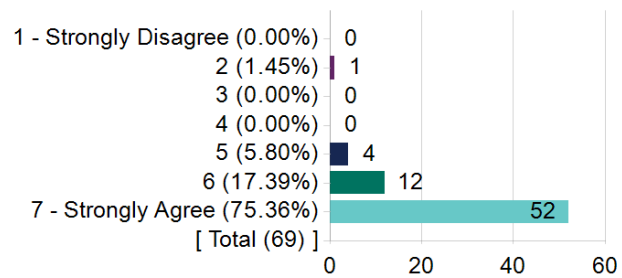
3. Assigned homeworks were helpful and relevant to the course.



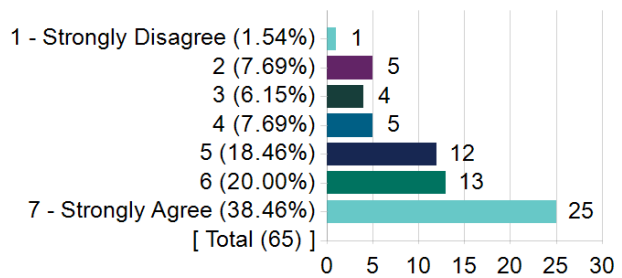
4. There was reasonable time to complete assignments.



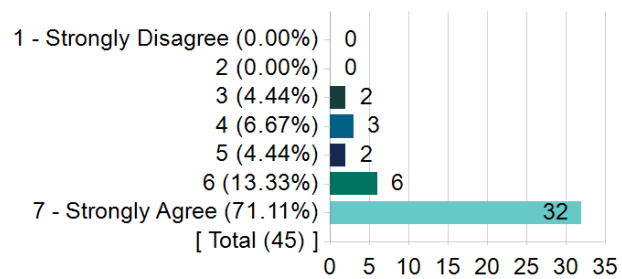
5. Assignments were returned within a reasonable period of time.



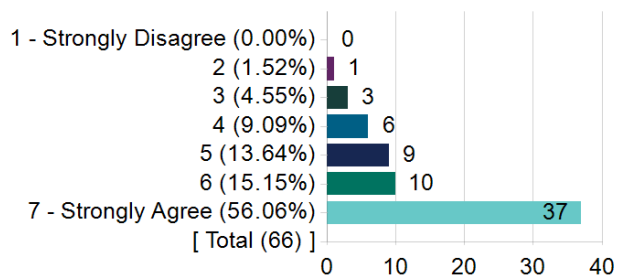
6. Comments on graded work were helpful.



7. Labs were an effective supplement to the course.



8. The course material drew upon real world applications.



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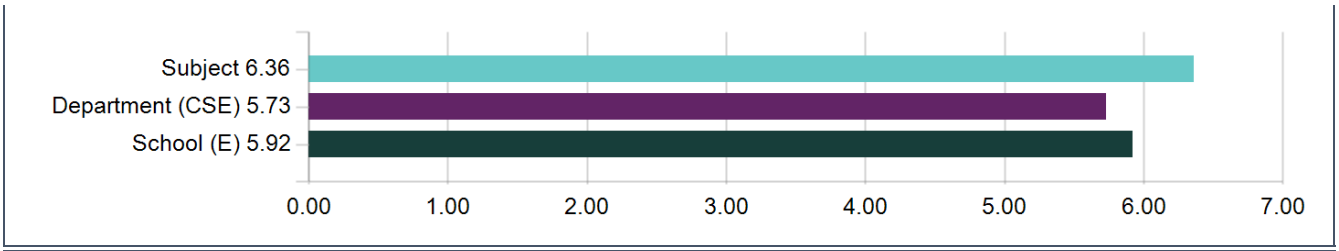
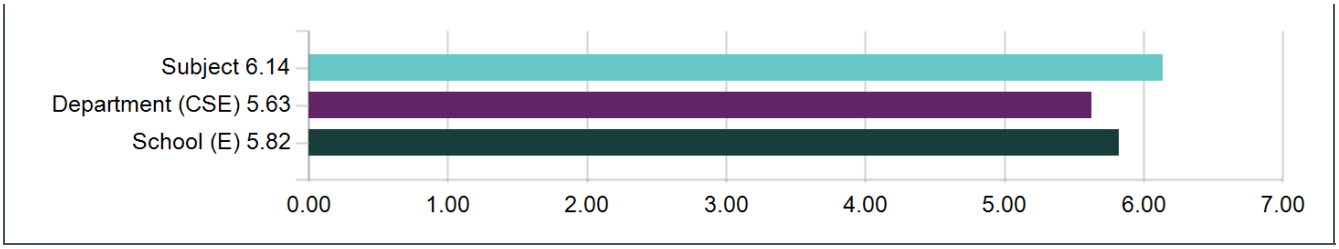
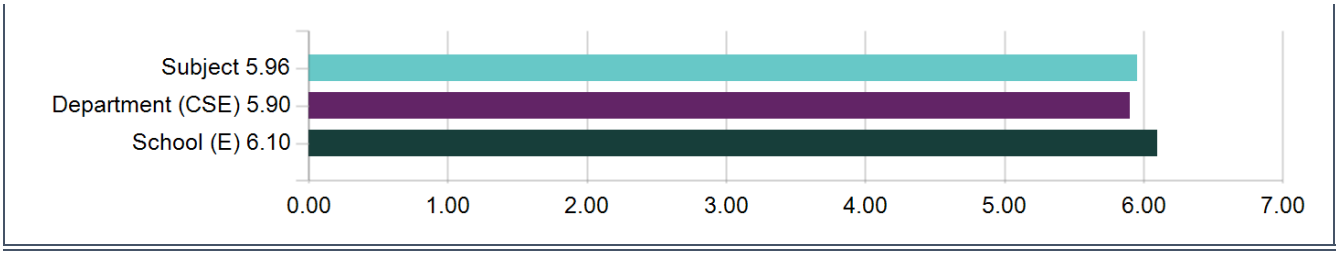


2. Textbooks/readings were useful.

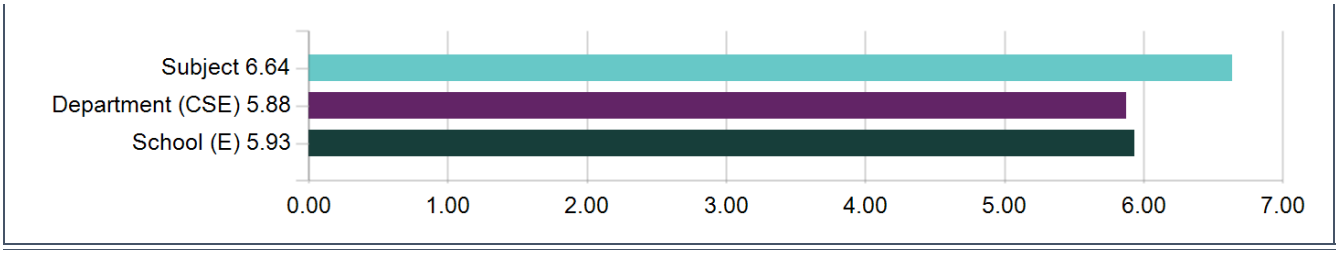


3. Assigned homeworks were helpful and relevant to the course.

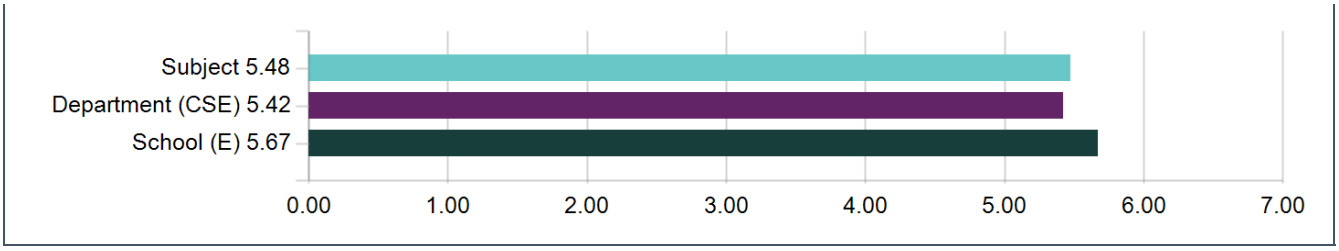
4. There was reasonable time to complete assignments.



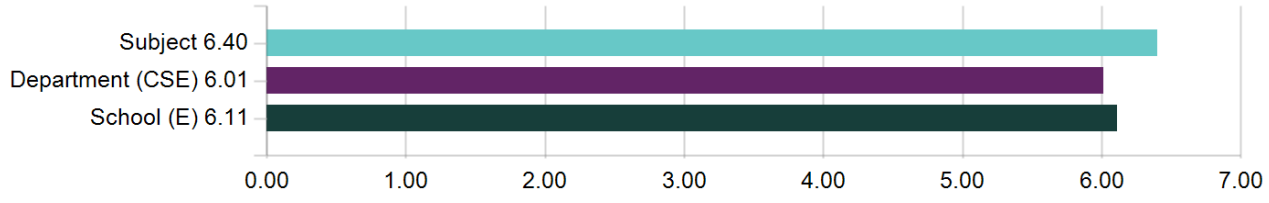
5. Assignments were returned within a reasonable period of time.



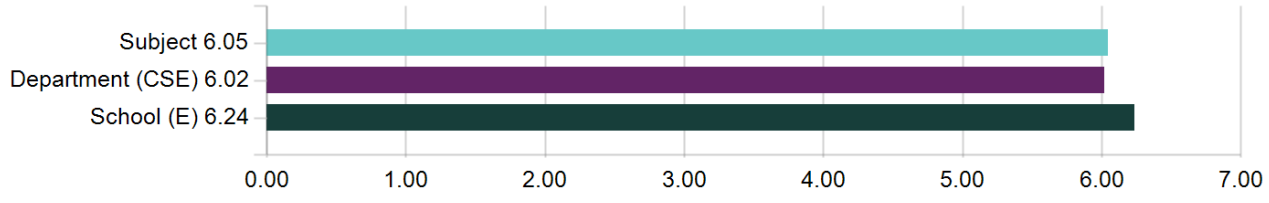
6. Comments on graded work were helpful.



7. Labs were an effective supplement to the course.



8. The course material drew upon real world applications.



Please elaborate if you felt the textbooks/readings were not useful.

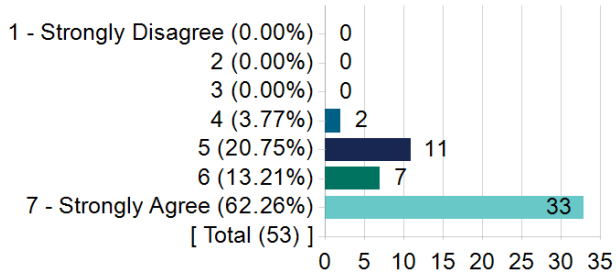
Comments
not a lot of real–world application for quantum computing yet in general so
No textbook in this class
A bit more readings might be better.
I happened to have some chance to experience the Yale version of undergrad quantum computing course (because my ex–roommate is taking that at Yale), and I wish the materials could do a bit deeper.

Assistant to the Instructor (AI) and Recitation

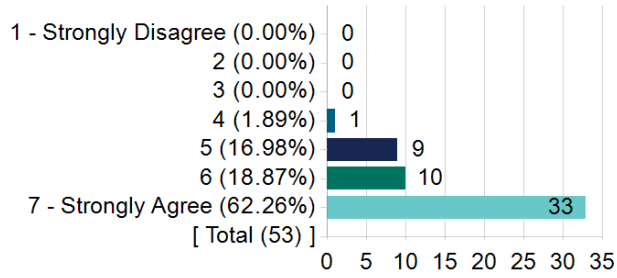
Rating Scale Responses

Question	Subject			
	Response Count	Mean	Standard Deviation	Median
The assistant to the instructor was effective.	53	6.34	0.94	7.00
The assistant to the instructor was available and responsive to questions.	53	6.42	0.84	7.00
Recitation section served to enhance your understanding of the course material.	33	6.36	0.93	7.00

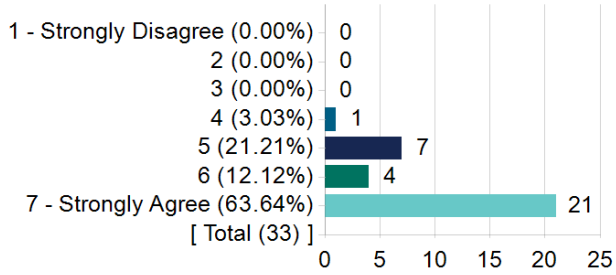
1. The assistant to the instructor was effective.



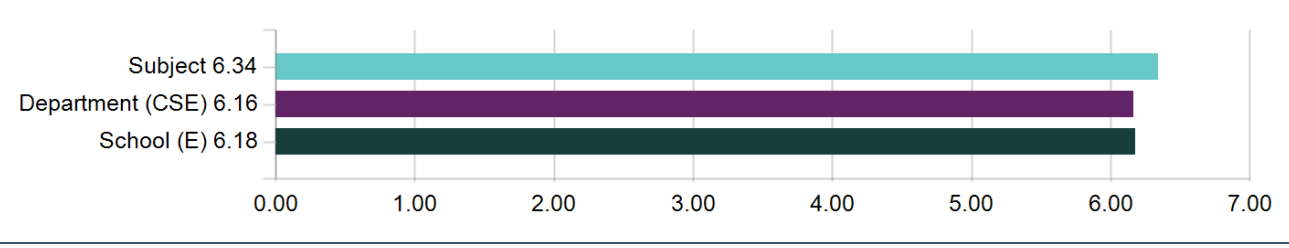
2. The assistant to the instructor was available and responsive to questions.



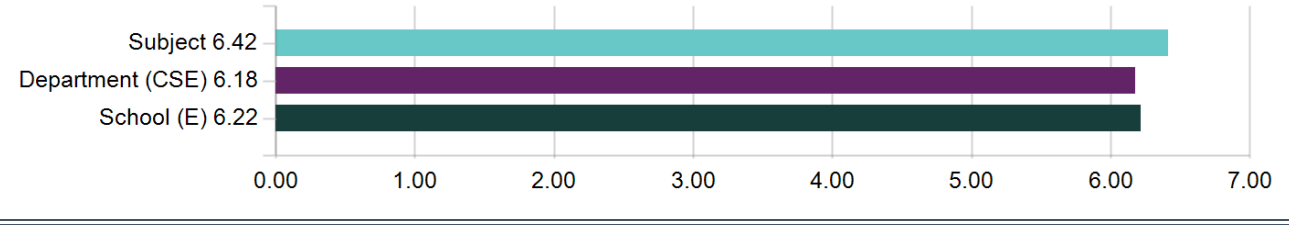
3. Recitation section served to enhance your understanding of the course material.



1. The assistant to the instructor was effective.



2. The assistant to the instructor was available and responsive to questions.



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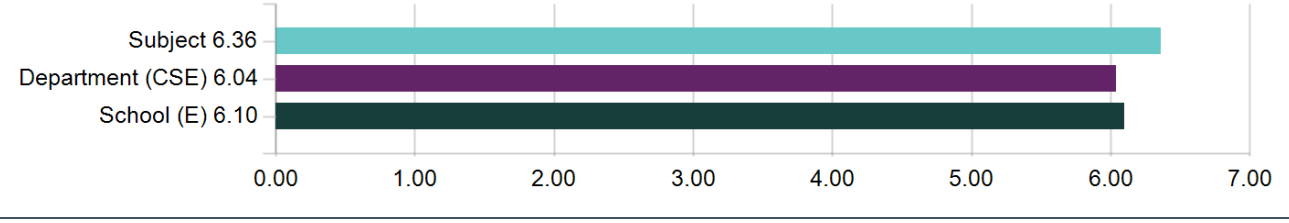


Please comment on the effectiveness of the assistant to the instructor (AI).

Comments
TAs were great
Didn't interact with the AIs personally, but they were very active on piazza.
Super helpful to have to understand the material as it pertains to assignments. It would be nice to have a few more office hours if possible with the schedule.
Super nice and accessible
Some TAs were honestly more helpful than others (David in particular, and the one that wrote the PDFs, were a huge help). I found that generally speaking, the TAs that had written the assignments were able to answer questions, but that the other three would be more unfamiliar with the material. Essentially, if you weren't able to go to the right person's OH that week, there was no guarantee of getting clear guidance.
TAs are great! Thanks!
Overall, they are good and helpful, but sometimes they made arguments that seem naive (about homework comments and answers to questions).
AIs are awesome in terms of hosting Office Hours and grading.
The homework questions were often unclear and required additional assumptions and clarifications. Comments on graded work could have been more detailed. I often had to follow up with the TAs to determine what I had done wrong in the homework sets.
I did not interact with the AI's at all so I cannot comment
good
teaching assistant provides lots of help in office our. They help us understand many concept.
Don't think we had them.
I never interacted with the AIs, so can’t speak on their effectiveness in office hours.
The TAs were always helpful and willing to help out.
I attended TA office hours frequently throughout the semester and always walked away with an understanding of whatever I had gone in to learn more deeply.
Some of the assignments are graded not so well – maybe the content of this course is a little bit hard.

Please comment on the effectiveness of the recitation section.

Comments
NA
No recitation
good
Didn't ever go
No recitation

Exams and Grade

Expected grade for this course.

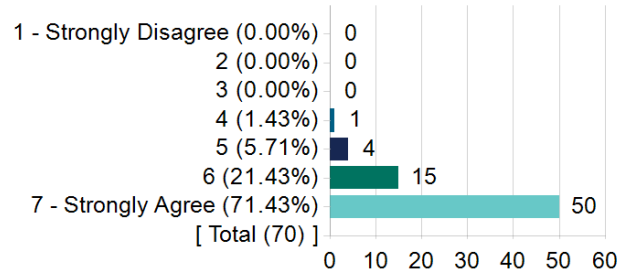
Expected grade for this course.

Options	Count	Percentage
A	55	83.33%
B	7	10.61%
C	2	3.03%
D	1	1.52%
F	0	0.00%
P	1	1.52%

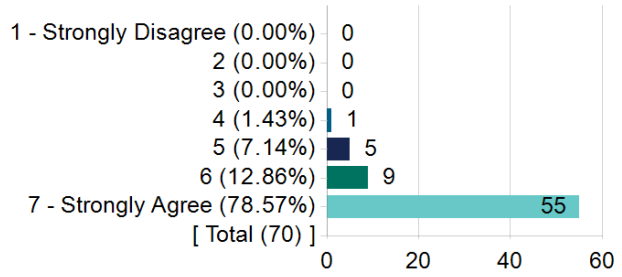
Rating Scale Responses

Question	Subject			
	Response Count	Mean	Standard Deviation	Median
Exams reflected material taught.	70	6.63	0.66	7.00
Adequate time was given to complete exams.	70	6.69	0.67	7.00
Your grades to this point accurately reflect your understanding of the material.	69	6.19	1.25	7.00
The grading system was consistent and equitable.	70	6.60	0.89	7.00

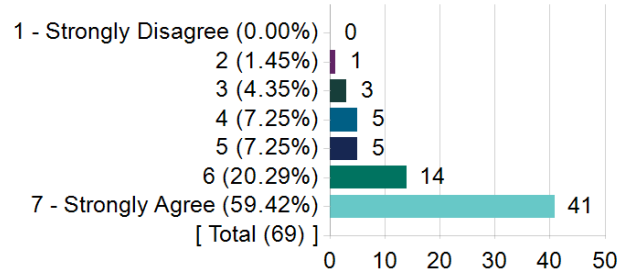
1. Exams reflected material taught.



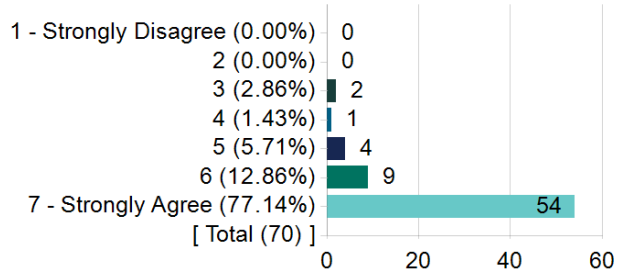
2. Adequate time was given to complete exams.



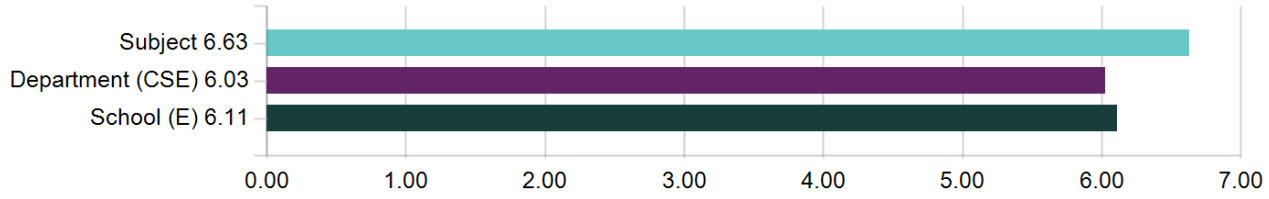
3. Your grades to this point accurately reflect your understanding of the material.



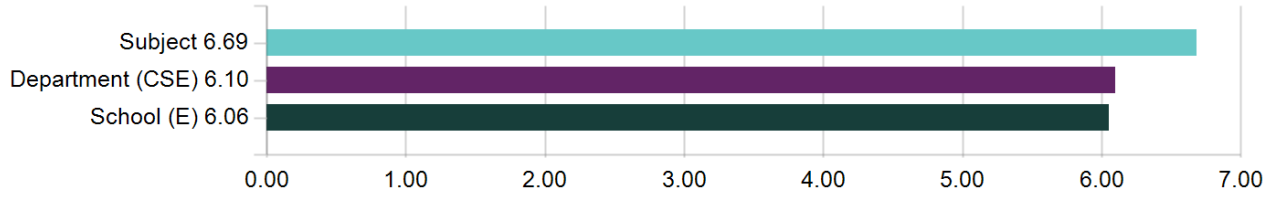
4. The grading system was consistent and equitable.



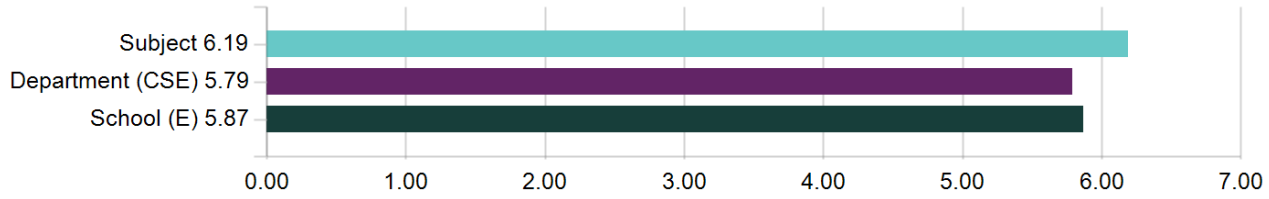
1. Exams reflected material taught.



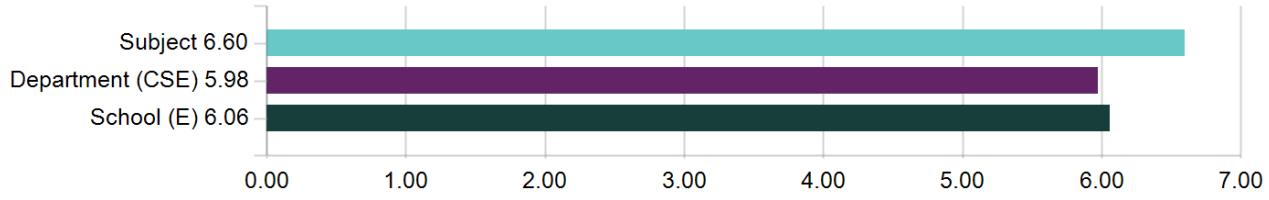
2. Adequate time was given to complete exams.



3. Your grades to this point accurately reflect your understanding of the material.



4. The grading system was consistent and equitable.



Please elaborate if you felt the grading system was not consistent and equitable.

Comments
I felt that the grading was consistent however the difficulties of some exams and assignments varied greatly.
huge chunks of points are taken off for very minor mistakes or compiling errors when submitting the jupyter notebook python. The rubrics must be changed to account for minor mistakes because as of right now the grading just feels rigid. This is somewhat counterbalanced by how generous exams are but it still does not feel right if a particular homework that I put a lot of time into gets deducted for non mistakes

Overall

About how many hours per week did you spend on this course outside of class?

About how many hours per week did you spend on this course outside of class?

Options	Count	Percentage
0	0	0.00%
1-3	18	25.00%
4-6	30	41.67%
7-9	15	20.83%
10-12	6	8.33%
13-15	2	2.78%
Over 15	1	1.39%

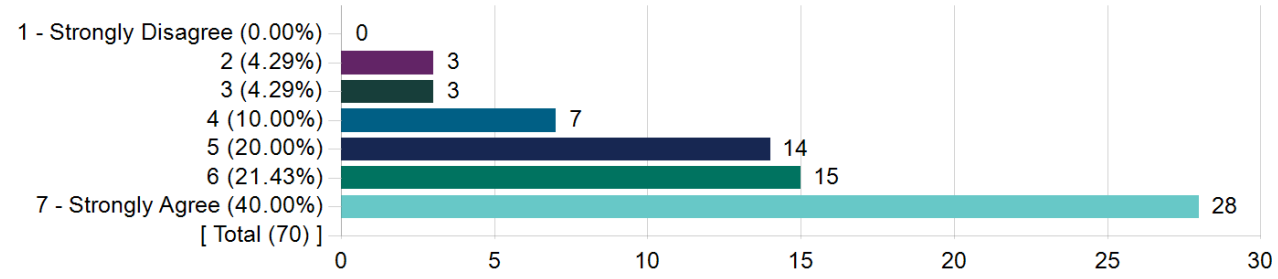
What percentage of the lectures did you attend?

What percentage of the lectures did you attend?

Options	Count	Percentage
0%	1	1.43%
10%	2	2.86%
20%	2	2.86%
30%	0	0.00%
40%	1	1.43%
50%	9	12.86%
60%	4	5.71%
70%	5	7.14%
80%	10	14.29%
90%	13	18.57%
100%	23	32.86%

Would you recommend this course to others?

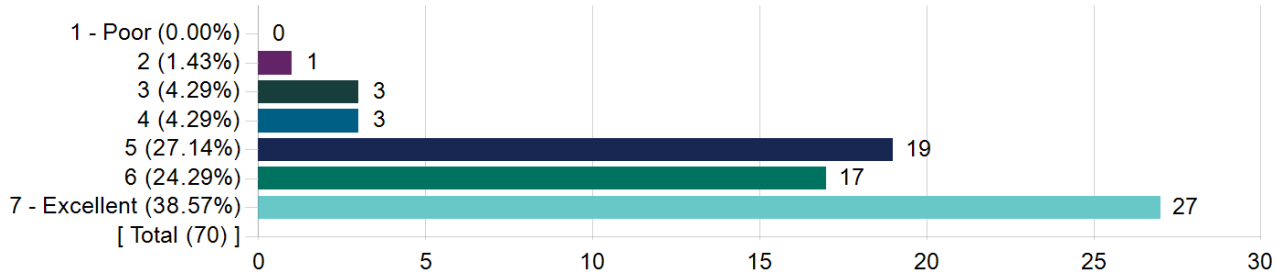
Would you recommend this course to others?



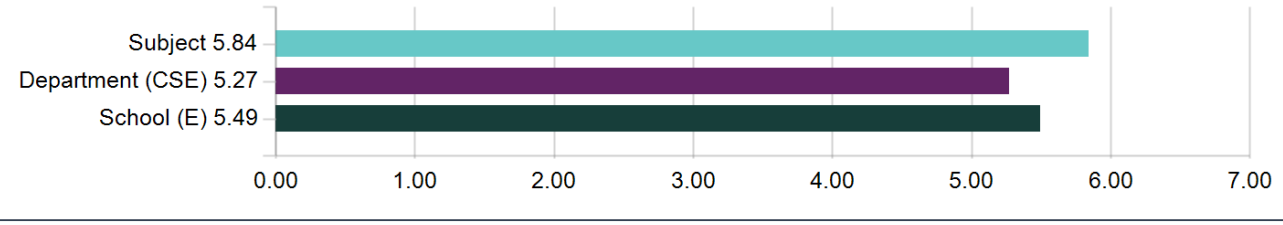
Statistics	Value
Response Count	70
Mean	5.70
Median	6.00
Standard Deviation	1.42

Overall satisfaction with the course.

Overall satisfaction with the course.



Statistics	Value
Response Count	70
Mean	5.84
Median	6.00
Standard Deviation	1.20



Any comments on why you did or did not attend lecture?

Comments
Personal health
I was dealing with personal issues
I attended most lectures, but would occasionally skip if I had a headache. The lectures were interesting, but not super conducive to my personal learning style; the slides were a little too detailed and we went through them too quickly for me to take notes. That being said, I have multiple learning disorders, so my personal experience here may not be the most relevant to everyone else in the class.
I found the lecture slides to be ~really not my learning style. They are a super cool resource and it's super cool that those exist generally speaking (like in the realm of QC learning worldwide), but I think that teaching with the slides, Ron would go a lot faster than he would if teaching on the board, and often phrase things similarly to what was written. As a result, if the wording of the slides didn't make sense to me, it was a pretty safe bet that lecture wouldn't either, because things would just be gone over quickly and anything written on the board would be sort of tangential. It also was generally more difficult for me to process the material without a format conducive to taking notes, and so my ability to form questions would happen after we had already moved on and so I felt awkward asking.
Courses were recorded so it's fine if I missed a few
covid
I was too tired after 2 hours of algorithms.
I am sorry that I was busy with PhD application and interviews early in this semester so that I could only attend 80% of the lectures — I want to attend all lectures.
I attended most of the lectures. however, I am amazed by how much students can be disrespectful! two students were sitting in the back of the classroom (a girl and a guy) talking and laughing loudly during the lecture! This happened in 3 or 4 lectures! It was disrespectful! If I were the professor I would ask them to leave the class and punish them for disturbing the class! I am not sure if professor Cytron was able to hear them from the front of the classroom! But they were a source of distraction!
no
couldn’t follow, content was uninteresting to me
going over lecture slides is more efficient
I didn't attend lecture because of the time of day, I would be so exhausted that it would be hard to think as hard as I needed to for quantum.
I thought the lectures were really interesting and I thought I would pay attention better in person.
Attendance not required.
Class was recorded, so on a few days where I had lots of other work to attend to I would catch up on class through recording a day or two after, but I attended class whenever feasible because following professor Cytron's work on the boards and through the projector was much easier and more effective in person.
It is reported that someone tested positive on COVID–19, so I was absent. Nevertheless, I have deeply reviewed the slides.

Comments

What did you like most about this course?

Comments
Very well taught, super interesting material, connections to real–world applications.
Very good professor
The combination of CS and Math was really nice
Interesting material
I liked how the material was difficult, but presented in a digestible manner.
The material was interesting and being taught by someone who was interested in it, which naturally fosters interest in the students
Great and understanding prof. Intellectually stimulating material that is very different from any other subject.
The lecture slides are definitely help for understanding the material and reviewing the material.
I liked how it was able to include topics from many other subjects such as linear algebra and physics and be able to relate it back from them.
I wanted to learn about quantum computing more formally, so I liked the content of this course which walked us through some of the algorithms.
Super interesting and exciting content, and I loved how fired up the students and Dr. Cytron were. The homework was relevant to the exams and really felt like it helped me learn the material.
Very interesting and different content.
Ron's passion for the material, and how new this whole thing is. The concepts are really cool, I just don't think I learned them well enough to explain them to anyone else.
The topics
Content is made interesting. The instructor is good at explaining.
The qiskits were good (except for q3)
Being able to practice quantum by running code on actual quantum computers was both fun and educational.
The lecture slides are well organised and the homework sets as well as coding materials are super helpful for me to understand the class. Instructor Cytron is awesome.
I liked the intriguing concept of the ability of a quantum system to store information in the superposition of states, which can be interfered with to create algorithms to find different values that are hard to do classically.
Good pace for covering a broad set of materials
I appreciated the relevance to the expanding field of quantum computing. It felt like an innovative and relevant course that gave me the background to further my knowledge in the field.
I liked that the course was teaching something fairly novel. I liked learning about something that was still continuing to improve rather than something that is more less set in stone.
Professor Cytron's enthusiasm while teaching. The content.
Everything!
contents
It was super interesting, and professor was passionate
The assignments, lectures
PPT is very complete and detailed.
Enjoyed making the circuits, and understanding how the oracles were physically built and why.
Materials are documented in the slides in a clear manner.
fair and flexible system
The material is very cool and interesting
I liked how it talked, I think ultimately Professor Cytron did a good job presenting this material.
I liked the scope of the material and how Professor Cytron was able to explain it to us, especially the quantum mechanics/ physics aspect of it.
I appreciated learning more about a cutting edge topic in the field of CS. I also appreciated the fact that it is a theory course, as opposed to a purely applications course, like the vast majority of electives offered.
Interesting concepts
i thought the powerpoints were super nice and the topics were interesting
The reduction in assignments second half of semester
I do not tend to love theory courses, but the way quantum computing is presented as a possible key to the future of programming makes this course very interesting.

How could this course improve?

Comments
The last half of the course, got pretty convoluted and confusing to me. I think if we covered phase–kickback before all of the games that may have helped.
it is definitely very abstract and the material can be quite confusing. I think cutting out some of the material would increase student understanding and comprehension.
The beginning of the course could be better. The first few (1–3) lectures move very fast. I felt like I was lacking some prior knowledge about quantum.
Maybe have slides for the last few lectures as well? I know the professor is already working on this
Less homework early on
I think the slides could be less cluttered. Simpler would be better in my opinion.
More practice problems available, not necessarily homework
Difficult with such heavy topics but sometimes, I still felt I had a lesser grasp than I wanted with the topics.
Having slides for Grover's algorithm and Shor's algorithm would definitely help.
In the beginning, there were way too many homework assignments, so it was pretty overwhelming. Towards the second half though, the assignments decreased in frequency, which was much better.
I think some more practice (such as assignments) on the later topics would be helpful because the course picks up in speed and difficulty in the second half.
I wish slides were in a printable format, so that I could carry a physical copy (a personal preference)
I'd slow down and simplify the slides a little bit. They're great slides – they were super helpful for doing the homework, but I used them almost more like a textbook. Having an abridged lecture version of the slides may be a good idea in the future.
Cover at a slower pace, leave out some less important topics. More homework assignments for the second half of the course or maybe optional practice.
More lecture via chalkboard! More clarification of the very basics earlier on, more spaced out homeworks.
Might need more homework for the second part of semester.
We spent a lot of time on the quantum games, but I think we could have spent more time on Shor's and QFT which are more prevalent and critical techniques than the games.
LET PEOPLE TYPE / TYPESET THEIR HW. Some people just want to practice and type their own work and it does not make sense that we have to accommodate by printing and scanning our work to make grading more efficient. I TA for machine learning and sift through 100 submissions that look different and some have crap handwriting and you just deal with it. It is nonsensical that I benefit the grader at the cost of my own time and convenience. You are getting paid, I am the one paying.
Slides to reference for the last few lectures would have been great, but I trust those are forthcoming, so no major issues!
Maybe a more gentler introduction to the Qiskit assignments, I found it hard to use.
The materials could go a bit deeper
I felt that the slide decks were quite long. I appreciate the level of detail and use of sequential animations to work through derivations, but the number of slides was overwhelming.
Give less coding Homeworks in the first half of the semester! and provide more in the last half! to make the homeworks spread evenly throughout the semester.
The second half of the course needed a few more homework assignments (written problem sets, not qskit). I felt like there was a little bit of a scramble to learn right before Exam 2 because I hadn't fully learned things that were never reinforced on problem sets.
I would have actually liked to have longer and a greater number of homework assignments in the second half of the class because I found them really helpful in learning the material in the first half of the semester and as such I don't think I fully grasped the material in the second half as well.
The slides for last few course
more review
May be more example for student to understand
I'm honestly not sure why, but lectures were incredibly hard to follow. I learned mostly from looking back through slides while doing the homeworks.
organize the sequence of study better—at the beginning things could be more elementary to get people up to speed
I started the semester trying to take notes, as writing down information helps me learn it. I realized that taking notes during class wouldn't help, just because the slides go so fast and there's so much information on them. I ended up showing up to class, only getting an abstract/general feeling for the content, then going home and stepping through the slides at a slower pace while taking notes. I think that while the slides have a lot of valuable information on them, they overwhelmed me during lecture. I think covering Grover's on the whiteboard was the most satisfying pace of note taking.
Having a better plan for dividing the written and programming assignments since the beginning of the semester.
I think that it could presented a tiny bit slower and then maybe some more realworld applications? I feel like towards the end we had all the different algorithms where quantum was better than classical, but a lot of it just felt theoretical.
It could take a little more time to establish the basics before going into all the algorithms.

Comments
The slides related to the content covered on exam 2, I feel, did not provide a great way of refreshing myself on the content we covered in class. They work amazingly well as a lecture aid! But, it might be beneficial to have supplementary material for some of the more complex topics, including Grover's algorithm + Shor's algorithm, as well as Mermin Peres. No resources online, that I could find, covered Mermin Peres in the way we did.
i know its not your fault but like more tangable actions of quantom computing. it was a theory class but at times it felt like science fiction
more balanced courseload between first and second half of semester
The pacing at the start of the semester felt slightly rushed, but I believe this also speaks to how steep the learning curve is for this material. I doubt I would have grasped the content as well as I have if not for having two assignments due weekly at the start.

What did you like the most about Instructor Ron Cytron?

Comments
Super high–quality slides and very good at lecturing and answering questions
So enthusiastic and nice and helpful
He's undoubtedly very invested in the material and teaching quality. He wants his students to do well and I appreciate that.
Great person and great explanations
He was very comfortable with the material
Good teacher
I liked how he made an effort to help everyone understand it regardless of their background.
He is knowledgeable and passionate about the material he is teaching
Understanding and answers questions. Very difficult material to learn but not punishing in his assessments
I like how he presents the material and has very detailed slides prepared for it. He is also very good at answering individual questions during class, on piazza, and during office hours.
He was very enthusiastic about the course and surveyed the class for questions.
Just a really nice guy, very knowledge, and I love how enthusiastic he was about quantum computing. He was also very accessible over email and Piazza.
Very enthusiastic and really just wants students to learn.
Ron is really passionate about the material and that is super cool. I really appreciate that he reserved the beginning of class for questions – the surveys were a great idea. Also, he never made you feel like you were asking a stupid question (though definitely sometimes they were).
Professor Cytron is very knowledgeable about the course materials, and he is very accessible outside of class; he also made a very open environment for you to ask questions, which helped me a lot when understanding quantum concepts since it's hard to wrap my head around some of those. I like that if you work hard, you can learn a lot from this class.
He is good at explaining and is very nice to students. He is very reasonable in dealing with logistics.
Chill guy, but can be impatient, especially when he is under attack by questions or concerns regarding his course material. I feel bad because I have seen how students will try to disprove him and correct his material when in reality they are not understanding his intentions with the material. The guy worked at IBM for God's sake, why are these students trying to dunk on him when he clearly knows what he is talking about.
Instructor was very enthusiastic about the material, and his teaching style was engaging.
He explains everything well and patiently.
I liked that he was enthusiastic, nice, and really cared about students.
Really nice for questions and HW, always on time
He is passionate about the subject and is patient with students, taking the time to make sure we are all learning together.
I liked the lecture style, it made it very easy to follow along
Everything! His passion for teaching and making sure we understand the material!
Patient
he was excited about the course
Professor cytron is patient to answer every student’s question.
Patience
Very detailed lecture style
Instructor was well prepared for the course and responsive to questions.
he’s fair and responsive
Very open to answering questions, friendly.
The effort the professor put into this course to make it very easy for us to understand the course topics and related them to the state–of–the–art published papers.
I liked the slides he made and he clearly put a lot of effort into this course and had a lot of passion for the course.
I liked how much he was engaged with the material and he really wanted to make sure we understood it. He sent us many surveys and went over our questions in class, which I really appreciated.
Incredibly charismatic and wonderfully kindhearted. His passion for the material is radiant and he truly brought the material to life.
Made lectures easy to follow
tbe slides were awesome, he was super good at encuraging and answering questions during the lecture. he was also super knowledable and aporachable and also nice
he was enthusiastic
He is enthusastic
Professor Cytron was incredibly enthusiastic and passionate about this course. It is not in my wheelhouse necessarily, but professor Cytron made every single class interesting purely because I could tell how interesting he found the content, and he was always happy to answer any question a student may have during or after class.

How could Instructor Ron Cytron improve?

Comments
Maybe more interaction with the class to keep more people engaged
Slides could be less cluttered
Slow down and make the instruction more engaging (maybe some in class activities?)
Near the end of the semester, try to start with short review of previous topics that will be relevant in this lecture, even if the topics should be second–nature by then. I think that this would be very helpful to ensure that students don't fall behind.
NA
More practice examples showing how to solve
I think the lecture slides should be different from lecture notes. the slides used for leactures seem to be great lecture notes for studying later, but not great presentation slides. I think using simpler slides in lecture would be easier to engage with in lecture.
maybe some more varying office hours. I had a class during the before class hours
I think he could spend more time doing some written examples. Like physically writing out examples rather than showing them on slides.
Like I mentioned before, having the lectures more conducive to taking notes might have helped me internalize the material a little more.
Maybe go a little slower over confusing topics, especially when there is no power point to look back at.
Slow down please :) Your first lecture on Grovers via chalkboard was the first time I felt like I could follow you through the class, and it was so so fun! You are a great teacher, and your slides are awesome, but I sometimes felt like you got carried away, and the material was hard enough for me that I couldn't really follow you.
The exams are a little bit easier than I expected, but you can still learn lots of things by asking questions
Complete the slides for the last few modules.
Be more patient and understanding of students. I feel like teaching compsci does not teach you how to interact with students as intro courses are usually video based and you check out after demoing code so there is no real interaction between professor and student
Sometimes it is a little hard to understand the topics on the slides. The chalkboard examples helped a lot.
Could elaborate some materials more clearly
Have Q&A breaks during the lectures to encourage students to ask.
no
at times explain how the material he is covering is related to the broader topic.
If he can release ppt in advance so we can prepare lessons before class， I think this will better.
Make sure all lectures are online somehow so students can reference them at a future date.
lecture style is a bit dry
General course improvements stated elsewhere.
He could devote a little more time to qiskit in class at least at the beginning.
just finish up the slides. also maybe putting a seperate powerpoint online with out the transitions. it can be difficult to navigate through 300 slides to find the one you want. like put the normal slides up and also the slides without transitions just with all the info already on it
more practice problems for second exam
Maybe do more examples
A few courses at the end of the semester had no slides and were walked through exclusively on the chalkboards, but this is the first semester of the revamped class and I expect this will change quite soon anyway. To be clear, I don't think there is truly much room to improve, but that would be my one suggestion.

What would you tell another student who asked you to describe this course?

Comments
A lot of math and CS but the content is incredibly fascinating.
very confusing and only take if you like theory!
Hard, but probably the best CS course you can take
One of the most interesting courses at WashU. Not the most useful, since quantum computers are not common place yet, but very interesting
Little tough but interesting
It's a great introduction to quantum computing.
It's a lot of stuff that makes no sense until you stop trying to make sense of it, and then it makes perfect sense
It is a very interesting course that gives a good overview of quantum computing.
It's content overlaps somewhat with another class (Quantum Optics taught by Dr. Shen); I found it helpful to take both simultaneously.
Super interesting, low pressure (which is always where I learn best), and you'll feel like you're on the cutting edge all the time. Definitely take!
It is different and fun, but will challenge you to think.
Its definitely challenging, has a pretty decent workload, and isn't something you will probably use in your future career, but if you are interested in the topic then you should take it because when else/why not?
Nice instructor, interesting content.
It is an interesting introduction to quantum computing and how it can outperform its classical counterparts
Highly recommend the course.
An introduction to quantum computation, how can we use qubits within algorithms to achieve a better outcome than classical computation.
TAKE IT!
The course is exciting and relevant, and will provide you with a great background of quantum computing. There was a decent amount of homework, but it served the purpose of reinforcing the concepts.
The material is a bit difficult but the class is very manageable and you will learn a lot about quantum computing and its relevance.
The best course you can take at WashU!
worth to try
It's challenging but interesting
This is a great course
Homework, grades, what can you learn.
Very good and interesting introduction to quantum computing
A very interesting course that diverge from most CS courses. Some fundamentals in math and statistics required. Though the course is well–taught, unfortunately due to the nature of the course it has little real–world application and is more a "course for the future".
it’s fine
Very cool content, a bit of an unusual class, still very interesting and I'm glad I took it.
A very easy way to enjoy learning about quantum computing
I would say that it is definitely different than any other CS course you would take at WashU. It is interesting and is very in–depth on this specific subject, but is more great if theory is your thing.
This is a really fascinating course on quantum computing and its applications.
Incredibly work–intensive through exam 1, but it is ultimately needed to feel comfortable with quantum material. Exam 2 was ultimately much harder, not due to the content spiking in difficulty, but due to the lack of supplementary resources available.
Difficult conceptually but fair grading; make sure you don't fall behind.
its super theory and not always very tangable, its non the less interesting and super cool. i felt it was a good class though not super practical
quite hefty workload but not the most difficult
The learning curve is steep and there is a bit more matrix math involved than one might expect, but the content is very interesting, and as long as you attend every lecture and complete each assignment the exams will be entirely doable.

Have you observed any violations of academic integrity (e.g., cheating) in this course?

Comments
No
no
No
No
No
No
no
No
No.
nope
No
no
no
No
No.
No
Unlike other classes No, not at all!
no
No
No
no
No.
No
no
No
I have not.

Any additional comments?

Comments
No
:)
Thank you, professor! You made this semester worth it! I really hope one day I come back while being successful in my career and say professor Cytron taught me this course!
I really enjoyed this class! Thank you to Professor Cytron and all the TAs!
no
NO
No.
I really enjoyed the course and thank you to Professor Cytron for teaching it!
No

Hybrid/Remote Learning

The course Canvas page or website could be easily navigated to find course materials.

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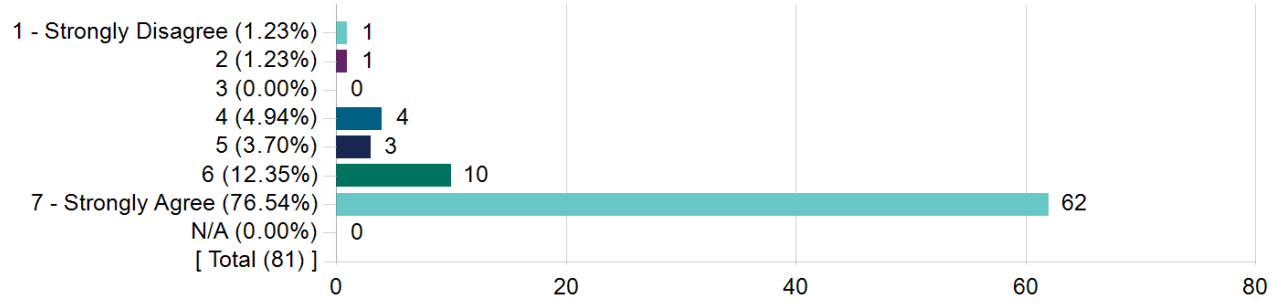

Statistics	Value
Mean	6.52
Median	7.00
Mode	7
Standard Deviation	1.12

Personalized Questions

The slides provided a good basis for learning and studying the material for this course

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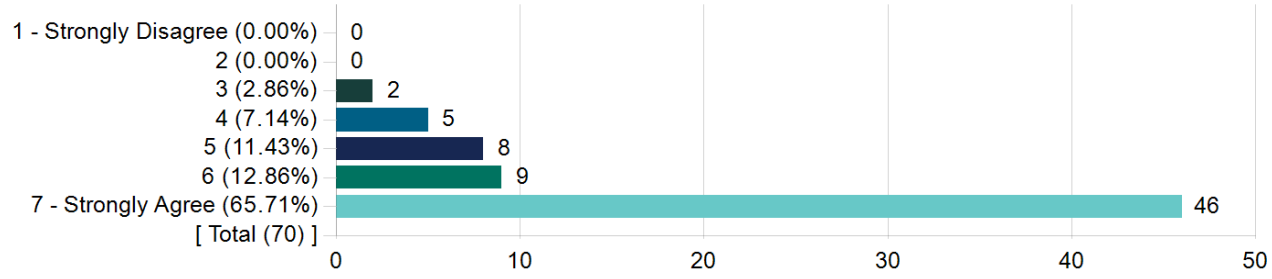

Statistics	Value
Response Count	70
Mean	6.31
Median	7.00
Standard Deviation	1.11

For lecture, I would prefer the more traditional chalkboard-based style over using slides for lecture

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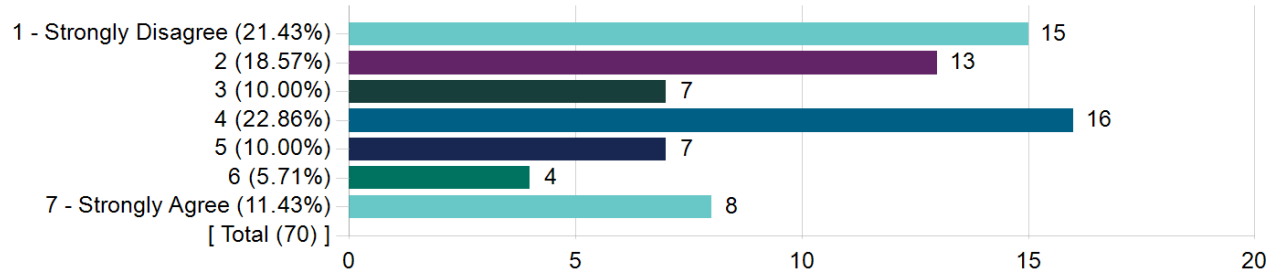

Statistics	Value
Response Count	70
Mean	3.44
Median	3.50
Standard Deviation	1.97

This course has motivated me to undertake further studies in quantum computing or quantum science.

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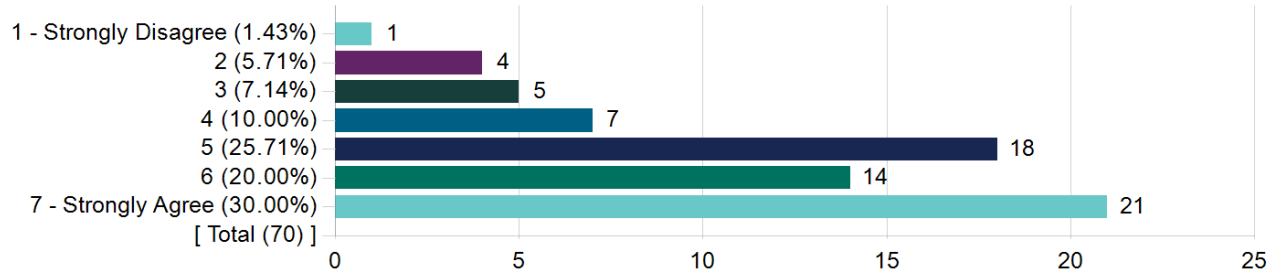

Statistics	Value
Response Count	70
Mean	5.33
Median	5.50
Standard Deviation	1.57