Report Comments

What are the most important things that you learned in this course? Please reflect on the knowledge and skills you gained.

Comments
How to properly write proofs, how all of the ideas we use in calculus connect/lead into one another, and why we can use common theorems the way that we do
I learned how to write a formal mathematical proof. I also learned the important theorems of the real number system and differential calculus, where they come from, and how to use them
Rigorous proofs of concepts in Calculus 1.
How to write Proofs, axioms, sets, theoretical underpinnings of limits, continuity and derivatives.
The proof based way of doing math
proof–based math; building real number system from axioms, limit & continuity, differentiability
I mainly learned how to write formal proofs and apply topics we learned about in class in rigorous ways.
Learning to write proofs and thinking through the logic behind mathematical theorems.
This course helped me gain familiarity with formal math proofs
I learned how to write formal proofs, how to prove several important theorems (including but not limited to the Mean Value Theorem, continuity of certain functions, existence/non–existence of limits, Intermediate Value Theorem, Heine–Cantor Theorem, etc), how to do with delta–epsilon formal proofs, the 14 axioms of the Real Numbers, how to do a proof by induction, and in general a lot about proof–based math.
Proof–based calculus
how to write proofs and that the proof life isn't for everyone
How to do math proofs. How to dissect math questions. How to visualize math concepts.

Describe how aspects of this course (lectures, discussions, labs, assignments, etc.) contributed to your learning.

Comments
The lectures were very helpful and incredibly interesting and engaging. The assignments were challenging but very fun and rewarding. The problem sessions and office hours were also helpful to work through the concepts from class and homework.
the lecture videos helped a lot
The lectures were extremely helpful and both exposed me to proof writing conventions/strategies, as well as important concepts and theorems. The discussion sections were helpful to see if you were understanding the class content enough to answer complex questions about it. The assignments were extremely helpful in practicing writing proofs and making connections/observations about the material in class.
Lectures and office hours were essential to learning. Assignments always related to class and often were connected to questions on the test.
Lectures introduced concepts but were often quite quick. The Problem session went over a few problems relating to the week's topic, or just discussed the Problem Set. The Problem Set contributed the most, as they forced me to review the lecture notes and apply the concepts.
The lecture and homework helps a lot, and the office hour is really useful
Lectures are very clear and great! Assignments can not only help us understand the concepts better, but also leads us to the mathematical way of thinking.
Assignments were very helpful in applying the things that we learned during lectures as they were usually harder applications than what we did on tests.
Office hours were by far the most helpful part of the course. The lectures were great introductions to each topic, and office hours really gave us a chance to connect the ideas in our heads.
Lectures and psets were very helpful
The lectures were extremely helpful because they were where new content was introduced and challenging theorems were proved. The assignments helped me apply the things we learned in class and solidify my proof–writing/logical reasoning abilities.
This was the most organized class I've ever taken. Recorded lectures, handed out slides to annotate each class, updated course notes, promptly graded weekly psets. Everything was organized, and you were in good shape in case you missed class.
Great handwriting on the blackboard. Extremely structured, and thus helps students to learn.

Please respond to the following:

	Mean	Median	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
This course challenged me intellectually.	4.89	5.00	0.00%	0.00%	0.00%	11.11%	88.89%
I understood the purpose of this course and what I was expected to gain from it.	4.83	5.00	0.00%	0.00%	0.00%	16.67%	83.33%
I understood the standards for success on assignments.	4.61	5.00	0.00%	0.00%	5.56%	27.78%	66.67%
Class time enhanced my ability to succeed in graded assignments.	4.89	5.00	0.00%	0.00%	0.00%	11.11%	88.89%
I received feedback on my performance that helped me improve my subsequent work.	4.67	5.00	0.00%	0.00%	0.00%	33.33%	66.67%
My work was evaluated fairly.	4.72	5.00	0.00%	0.00%	0.00%	27.78%	72.22%
I felt respected in this class.	4.72	5.00	0.00%	0.00%	5.56%	16.67%	77.78%
Overall, this was an excellent course.	4.72	5.00	0.00%	0.00%	0.00%	27.78%	72.22%

Additional comments about the course:

Comments
This is a really wonderful course for anyone interested in proof–based math.
Excellent course, excellent professor. You don't even have to be a math major or adjacent to take this; if you are interested in proofs and learning why 0<1 and why the things you learned in calculus BC actually work, this is a great course.
As bad as I did, this was an excellent course. Professor Alongi is one of the best math teachers I've ever had. When he explains it, it makes sense. Unfortunately, I just don't think I'm that interested in proof–based mathematics.

I would recommend this course to:

	No	Yes
Highly-motivated and well-prepared students	0.00%	100.00%
Anyone interested in the topic	38.89%	61.11%

Thinking about your time in the class, what aspect of the instructor's teaching contributed most to your learning?

Comments
Professor Alongi writing out formal proofs on the board during class was very helpful to understanding the process of writing a proof, the way to structure them, and the different methods that can be used in proofs. He was also very excited about the material which made the classes very engaging.
Prof. Alongi was very organized. He had slides prepared, class notes, neat handwriting, and clear explanations.
The way that Professor Alongi showed the intuitive interpretation of a concept before showing its rigorous proof/definition helped me to see where the rigorous argument comes from and how I can apply that to my assignments.
clear and well–organised lectures and notes
His office hours were very helpful to get started on the Problem Sets, and make sense of whatever happened. His lectures also helped to introduce the concepts, though it would not necessarily be clear how to approach the problems from them alone.
Alongi is great! His lectures are clear. And he is very accessible and friendly during office hours, and can help us a lot for doing pset or understanding mathematical concepts in general. More importantly, I'm moved by his passion of mathematics and from him, I feel the beauty of mathematics.
He was very good at drilling definitions into our heads by asking us to repeat them in class which was helpful. He also gave very good examples and was receptive to questions.
His ability to walk us through each step of the proofs was invaluable. His patience with answering questions outside of class really helped improve my general mathematical capability. Overall, Mr. Alongi is an excellent teacher.
Lectures were very helpful
The lectures contributed the most as that was where Professor Alongi covered new content and explained things. However, office hours also saved me because it was a great time to get clarification, check answers, and ask questions and get help. Also his sense of humor sometimes helped make the content more memorable.
Explains every proof in detail
He would hand out slides to follow along with him. He stopped for questions, had very neat handwriting, and even went out of his way to visualize concepts such as uniform continuity.
Structured proofs and Graphs. Organization.

What could the instructor modify to help you learn more?

Comments
Nothing, he was a fantastic professor.
Nothing.
nothing, it was great
Sometimes the lectures were not clearly organised and very fast.
really nothing
I think he did a very good job.
Giving additional practice problems before midterms would be very helpful.
The instructor could give us more practice problems from the textbook before the two midterms like he did for the final exam. Those were very helpful.
Nothing
nothing.
Spend more time explaining the most difficult concepts of the class. Provide more examples and optional additional questions to practice.

The Instructor . . .

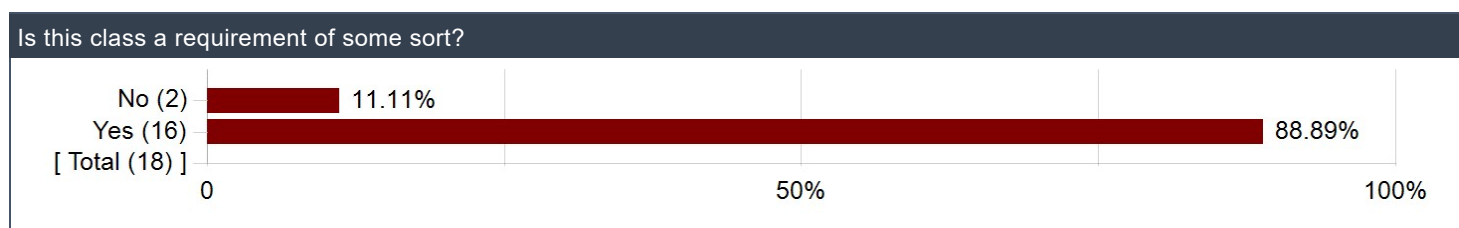|	Mean	Median	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Organized the course clearly.	4.89	5.00	0.00%	0.00%	0.00%	11.11%	88.89%	0.00%
Presented lectures that enhanced your understanding.	4.94	5.00	0.00%	0.00%	0.00%	5.56%	94.44%	0.00%
Facilitated discussions that were engaging and useful.	4.71	5.00	0.00%	0.00%	11.11%	5.56%	77.78%	5.56%
Stimulated your interest in the core ideas of the course.	4.72	5.00	0.00%	0.00%	5.56%	16.67%	77.78%	0.00%
Challenged you to learn.	4.94	5.00	0.00%	0.00%	0.00%	5.56%	94.44%	0.00%
Helped you gain significant learning from the course content.	4.83	5.00	0.00%	0.00%	0.00%	16.67%	83.33%	0.00%
Was available and helpful outside of class.	4.83	5.00	0.00%	0.00%	5.56%	5.56%	88.89%	0.00%
Motivated you to think independently.	4.83	5.00	0.00%	0.00%	0.00%	16.67%	83.33%	0.00%
Worked to create an inclusive and welcoming learning environment.	4.78	5.00	0.00%	0.00%	5.56%	11.11%	83.33%	0.00%
Overall, this instructor made a significant contribution to your learning.	4.89	5.00	0.00%	0.00%	0.00%	11.11%	88.89%	0.00%

Please include the name of the TA/CA/Intern you are evaluating. What aspects of the TA's teaching contributed most to your learning? What could the TA modify to help you learn more? Please include any additional feedback for the TA/CA/Intern.

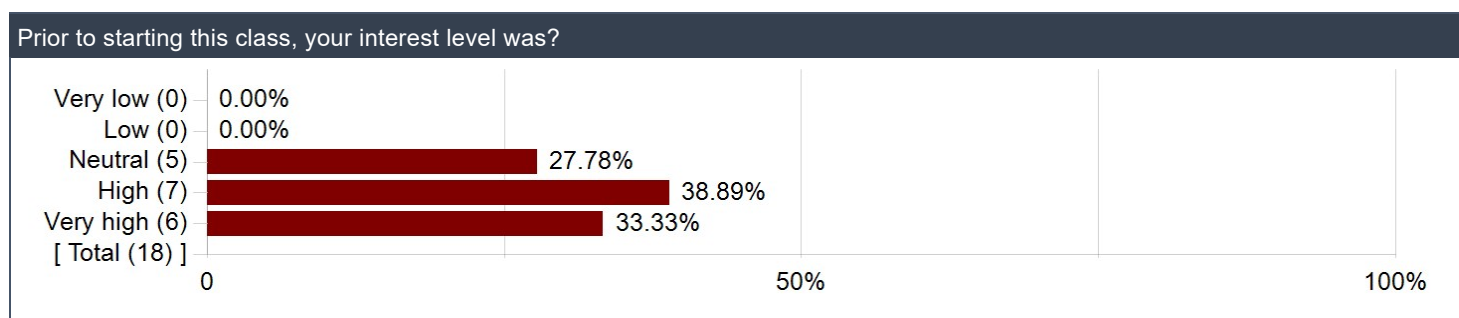| Comments |
|---|
| Aisosa's problem sessions were very helpful and interesting. He also had several office hour times during the week which were really great for working on the assignments. |
| Aisosa was helpful when you asked him a general problem about the homework. But when you asked him about a specific line of the homework, he sometimes didn't understand what I was asking, and would answer a different question. I would then clarify my question and he would still just not understand what I was asking. |
| My TA was Aisosa Efemwonkieke. The TA's office hours contributed most to my learning, as he was always available to clearly answer questions on assignments. The discussions were also helpful and the true/false questions were good evaluations for me to see if I actually understood a concept. |
| Aisosa. He would give hints and help out with homework problems. Also helped prepare for midterms and finals by highlighting important skills. |
| Aisosa Efemwonkieke |
| Aisosa. His discussion sessions were helpful when trying to finish the homework, but often he would forget something in the Problem session that made the problem unapproachable. It would be better if he had some clarity over that problem. |
| Aisosa. He was very receptive and good at answering questions. |
| Our TA was Aisosa Efemwonkieke. His office hours were really helpful, especially the discussions regarding the concepts in our assignments. |
| Aisosa Efemwonkieke |
| Aiososa; Aisosa was a really nice and smart guy. I think that's why many of his explanations were more confusing then they needed to be especially for people like me who really struggled with the basics. He also was very on not giving away homework answers which resulted in explanations being less clear than they could've been. |
| Aisosa |

The TA/CA or Intern. . .

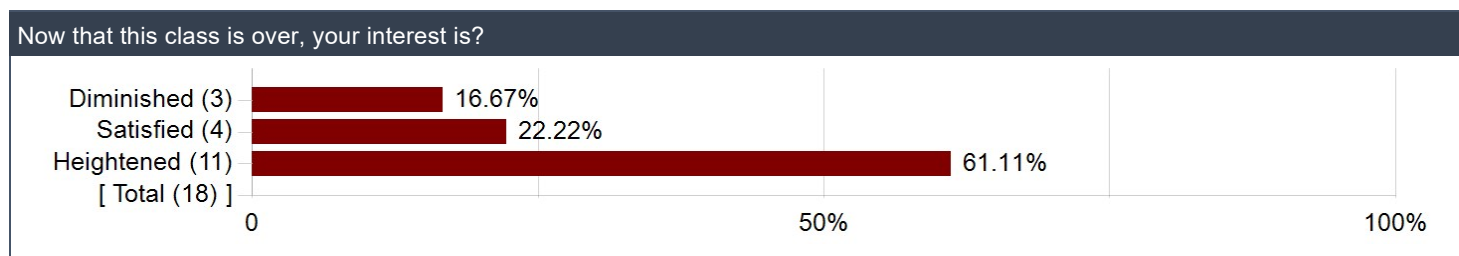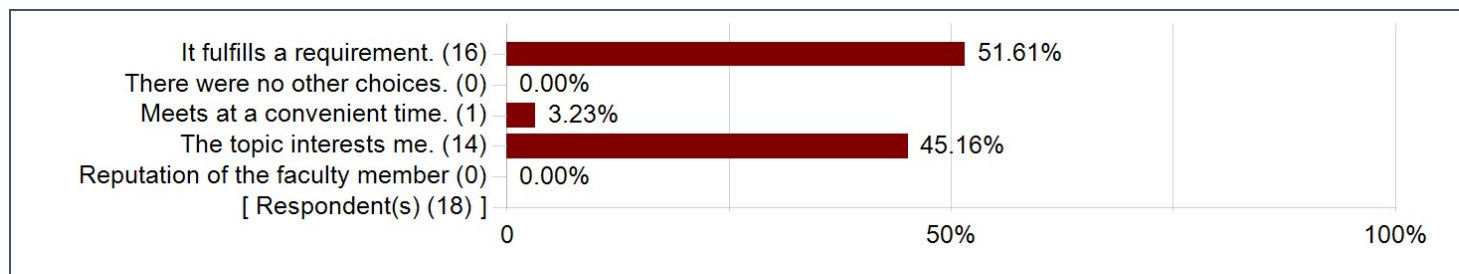|	Mean	Median	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
Facilitated discussions that supported your learning.	4.58	5.00	0.00%	0.00%	8.33%	25.00%	66.67%	0.00%
Gave you useful feedback on your work.	4.67	5.00	0.00%	0.00%	8.33%	16.67%	75.00%	0.00%
Stimulated your interest in the core ideas of the class.	4.42	5.00	0.00%	8.33%	8.33%	16.67%	66.67%	0.00%
Challenged you to learn.	4.58	5.00	0.00%	8.33%	0.00%	16.67%	75.00%	0.00%
Helped you succeed in the class.	4.33	4.50	0.00%	8.33%	0.00%	41.67%	50.00%	0.00%
Was available and helpful outside of class.	4.75	5.00	0.00%	0.00%	0.00%	25.00%	75.00%	0.00%
Overall, this individual made a significant contribution to your learning.	4.42	5.00	0.00%	8.33%	0.00%	33.33%	58.33%	0.00%

Is this class a requirement of some sort?

Is this class a requirement of some sort?

```
No (2)        ████ 11.11%
Yes (16)      ████████████████████████████ 88.89%
[ Total (18) ]
              0              50%              100%
```

Prior to starting this class, your interest level was?

Prior to starting this class, your interest level was?

```
Very low (0)   0.00%
Low (0)        0.00%
Neutral (5)    ██████████ 27.78%
High (7)       ██████████████ 38.89%
Very high (6)  ████████████ 33.33%
[ Total (18) ]
               0              50%              100%
```

Now that this class is over, your interest is?

Now that this class is over, your interest is?

```
Diminished (3)  ██████ 16.67%
Satisfied (4)   ████████ 22.22%
Heightened (11) ██████████████████████ 61.11%
[ Total (18) ]
                0              50%              100%
```

Why did you choose to take this course? (Select all that apply)

It fulfills a requirement. (16)	51.61%
There were no other choices. (0)	0.00%
Meets at a convenient time. (1)	3.23%
The topic interests me. (14)	45.16%
Reputation of the faculty member (0)	0.00%
[Respondent(s) (18)]	

How many hours per week outside of attending required sessions did you spend on this course?

How many hours per week outside of attending required sessions did you spend on this course?

<5 hours (0)	0.00%
5-10 hours (7)	38.89%
10-15 hours (6)	33.33%
15-20 hours (3)	16.67%
20-25 hours (1)	5.56%
25-30 hours (0)	0.00%
>30 hours (1)	5.56%
[Total (18)]	

What proportion of classes did you attend?

What proportion of classes did you attend?

None (0)	0.00%
25% (0)	0.00%
50% (0)	0.00%
75% (2)	11.76%
All (15)	88.24%
[Total (17)]	
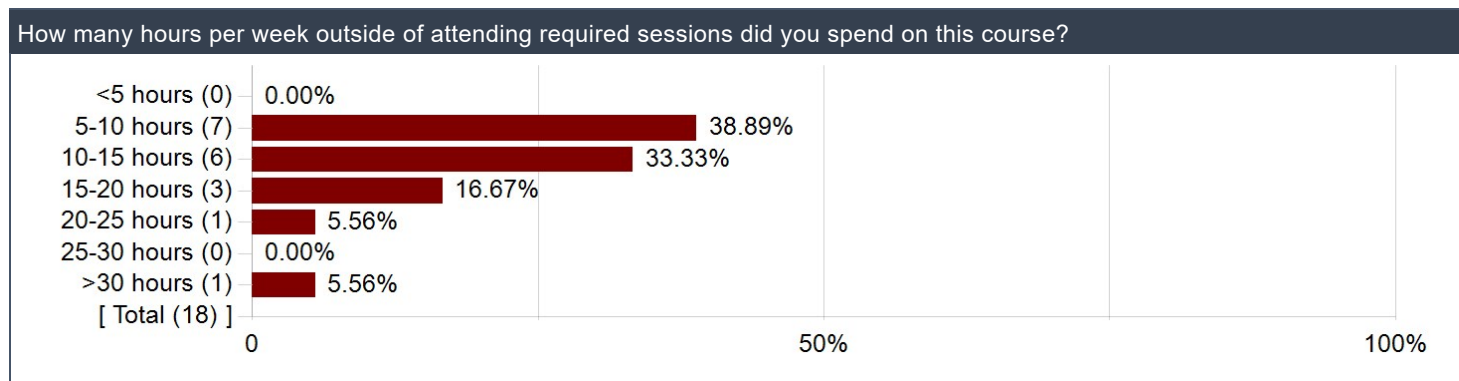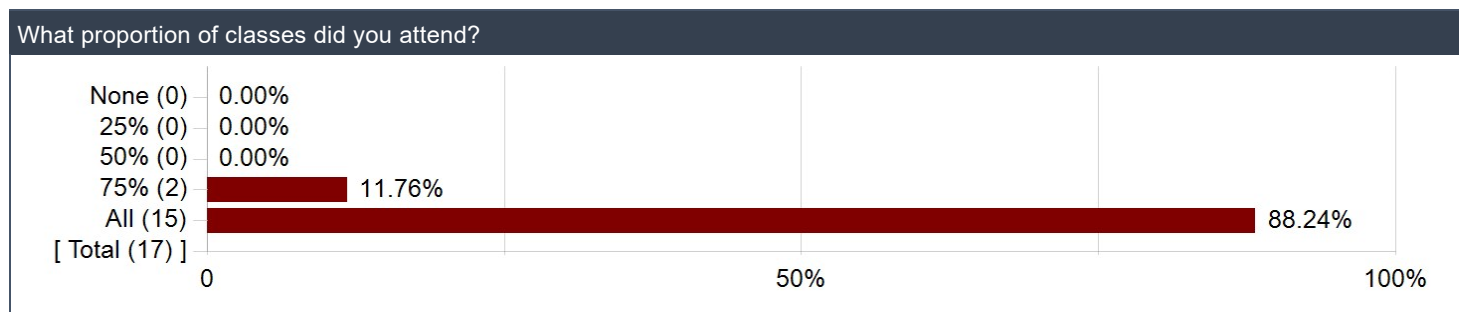
Please comment on the level of difficulty of the course relative to your background and experience.

Comments
The class was very challenging but also rewarding. Having taken calculus BC, all of the topics were familiar, but instead of just using theorems to solve problems, we got to prove why they make sense.
This class is the hardest class I have taken so far. I would only recommend it for students thinking about doing some kind of applied math. As an economics major, it really does not make sense to take this class, which I learned the hard way.
I took AP Calc AB and BC and this course was very hard. I struggled with the weekly homework and tests were very difficult.
I had absolutely no proof–writing experience prior to this course and I didn't feel disadvantaged at all as the course gives you all the tools you need to write proofs on the assignments and midterms. That said, the assignments and midterms are extremely challenging and did require a lot of time and effort.
I've taken calculus through multivariable before and this course was still very difficult. It is nothing like what I've taken before and I wouldn't expect it to be easy for anyone who hasn't had rigorous experience with proof–based mathematics.
As someone who scored a 7 in IB Math Analysis HL, this was a very difficult course. I also thought that coming from the IB rather than AP meant my background in certain areas like the Intermediate Value Theorem and Limits were weaker, which often hurt me in the course.
It is fine:)
moderate — in fact the exact level of difficulty for a potential math–major who is not that competitive but has a reasonably solid math background. I feel myself to be gaining deeper understanding of mathematics every day, but never pressured. I really love this course!
This class was very hard because I didn't have any background experience with formal proofs.
Even as a high achieving math student, this course was initially very challenging. You have to change your approach to math and really gain a deep understanding of the actual concepts rather than using numeric shortcuts to solve problems. There is absolutely no computation involved, so doing well in this class requires you to learn a new skillset. If you remain consistent and attend all the office hours and think through all the problems on your assignments, you will definitely do well.
It was challenging since I had never taken a proof–based math class before, but it was overall very rewarding
I took AP Calculus BC in high school (excelled at it, got a 5) and had no experience with proof–based math unless you count honors geometry at a high–school level. This course was a bit hard to understand at some points (especially epsilon during the limits unit), but I worked hard and found myself grasping the logic and structure of everything. Proofs are introduced in an accessible way and are not intimidating. However you must understand the overarching pattern of everything covered to do well; don't get so caught up in doing the individual problems that you forget to ask yourself what the purpose of these problems might be. If you are willing to try, to ask for help, socialize, and be enthusiastic, you will do fine in the course.
It was interesting seeing how math is built up, and the theory behind things you didn't give a second thought about in AP Calc. If you're interested give it a go, but don't take this class just because you got a 5 on the AP exam. Within the first two weeks, multiple people had dropped, and I knew people who withdrew later. I toughed it out and am starting my academic career with a C. Think hard about what you want to do because this class will take up the majority of your time this first quarter. If you don't like questions that have an obvious answer which you then have to prove, stay far away from this class and the math major.

Discuss the effectiveness of the materials created by the instructor, such as assignment solutions, slides, and course notes.

Comments
I think the materials were very organized, easy to navigate, and helpful.
The professor gave a lot of materials
Very effective
The lectures were always recorded and available to view after class which was very helpful when a concept was confusing. The assignment solutions were thorough and easy to follow. The course notes were very thorough and a great study resource.
extremely effective and helpful
Course notes were very helpful, as they were in the way he approached the course rather than Spivak's way. Assignment solutions were helpful as well, but slides often lacked details and were thus could help with definitions but were lacklustre compared to the course notes..
The assignment solutions and class notes are really helpful for reviews
Very helpful. They are very clear and easy to understand.
I thought that the course notes were amazing and very clear. All of the solutions were very organized as well and overall the things given out by my professor were extremely helpful.
The course notes were very helpful for reviewing before the exams.
Lectures are all recorded and class notes are posted, and they were both very useful resources.
The course notes were an absolute lifesaver! I used them very, very often, in assignments and studying. Assignment solutions were a hidden treasure I forgot to take advantage of early on, but as the course went on I looked at them more and they helped as well. The slides are only helpful if course notes haven't been updated, since I take more extensive notes during the lecture and the slides' propositions and theorems are added to the course notes.
Effective
everything Professor Alongi created from his slides, course notes, recordings, assignment solutions were excellent.
Very effective. Great consistency throughout course materials.

Were the lecture recordings a valuable resource for the course?

Comments
Yes, I think it was helpful to be able to rewatch a lecture if it was particularly challenging.
They were very valuable
Yes these were super nice to have
Yes. When a proof or concept was confusing or if you miss class every single lecture is available to review easily.
I did not use them much.
It definitely is
N/A –– I never miss classes and I understand everything in class, so I never watch the recordings.
Yes they were good to look back on.
Yes, it was very helpful when reviewing for exams/completing psets.
Yes, even though I only used them once (I lost my notes for that day and re–took them from watching the lecture recording from that day).
Yes
very valuable resource.
Yes.

Provide suggestions for improving the course Canvas page.

Comments
I think the canvas page was laid out well.
It was a bit strange not to have modules and to instead have everything linked on the home page and I would probably prefer modules but it is perfectly fine to navigate, it just isn't what I'm used to. The assignments page doesn't load in the app for some reason which I don't think would happen if they were posted as a module.
Nothing really, maybe divide the class notes to different sections?
Nothing really, everything is good.
I thought it was organized very well.
Adding a list of additional practice problems for each topic would be great.
Maybe put the assignment statistics from Gradescope onto Canvas so they're not only accessible in a singular email to students after each assignment is graded? I didn't even realize emails were sent out until after the course was over. Other than that, there's not much to say.
nothing
Show the name of my classmates?