

The Northwestern University logo, featuring the word "Northwestern" in a purple serif font.

Individual Report for MATH_300-0_51: Foundations of Higher Math (Apurva Nakade)

Project Title: **Course and Teacher Evaluations CTEC Winter 2023**

Courses Audience: **24**

Responses Received: **18**

Response Ratio: **75.0%**

Report Comments

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Creation Date: **Tuesday, March 21, 2023**

The word "blue" in a lowercase, blue, sans-serif font, with a registered trademark symbol.

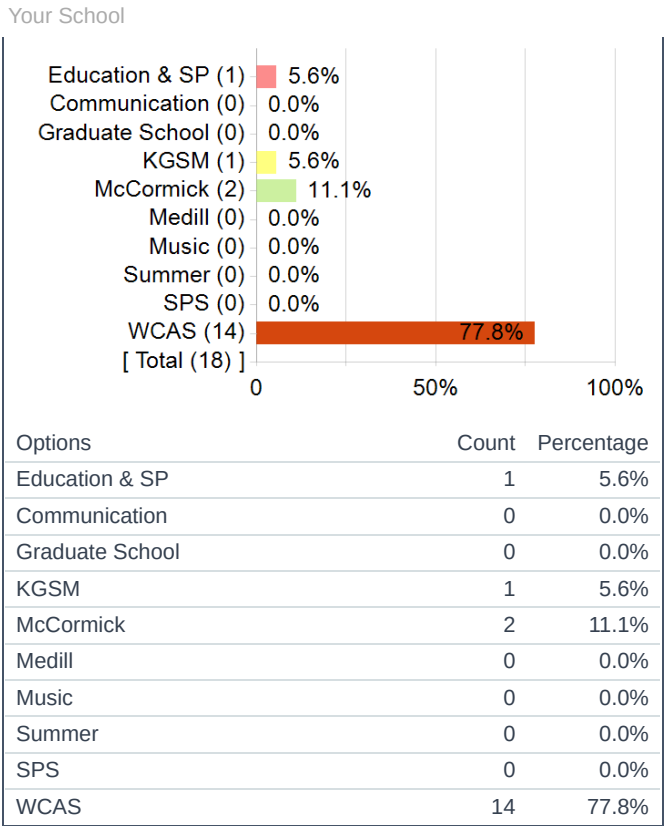
Northwestern University

Course Evaluations

Instructor	Course
Apurva Nakade	MATH_300-0_51: Foundations of Higher Math

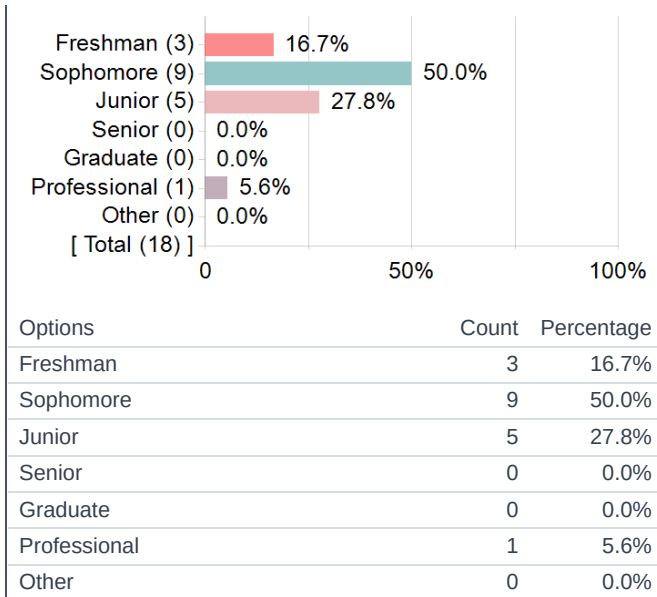
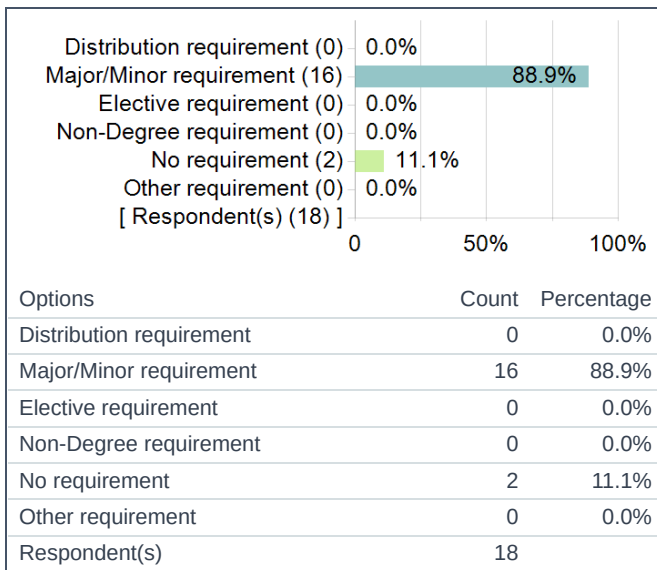
DEMOGRAPHICS

Your School



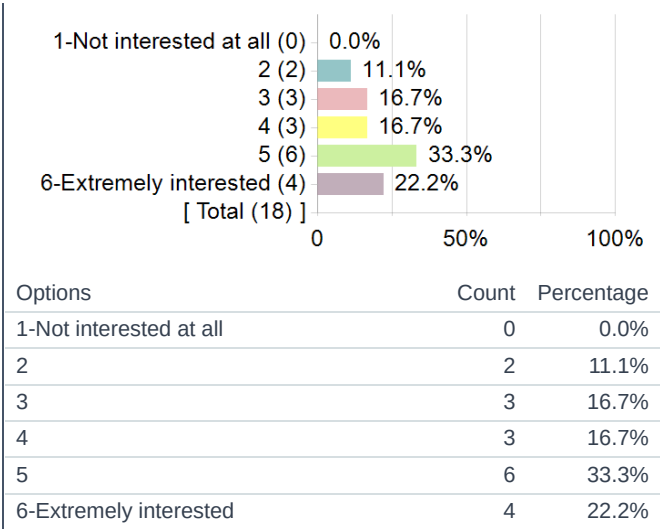
Your Class

Your Class

**What is your reason for taking the course? (mark all that apply)**

What was your Interest in this subject before taking the course?

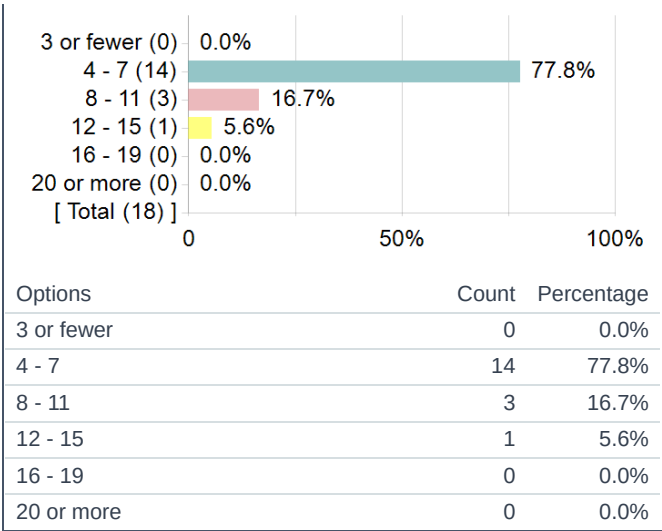
What was your interest in this subject before taking the course?



TIME-SURVEY QUESTION

Estimate the average number of hours per week you spent on this course outside of class and lab time.

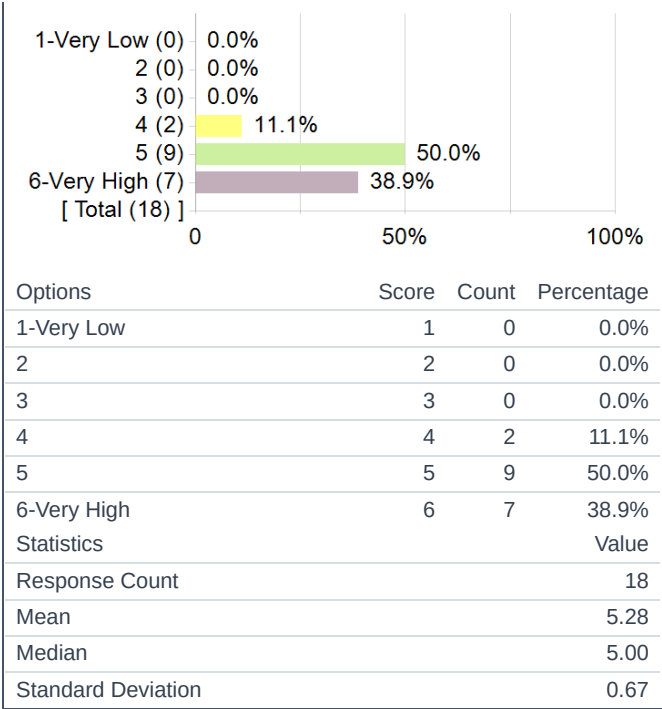
Estimate the average number of hours per week you spent on this course outside of class and lab time.



COURSE QUESTIONS

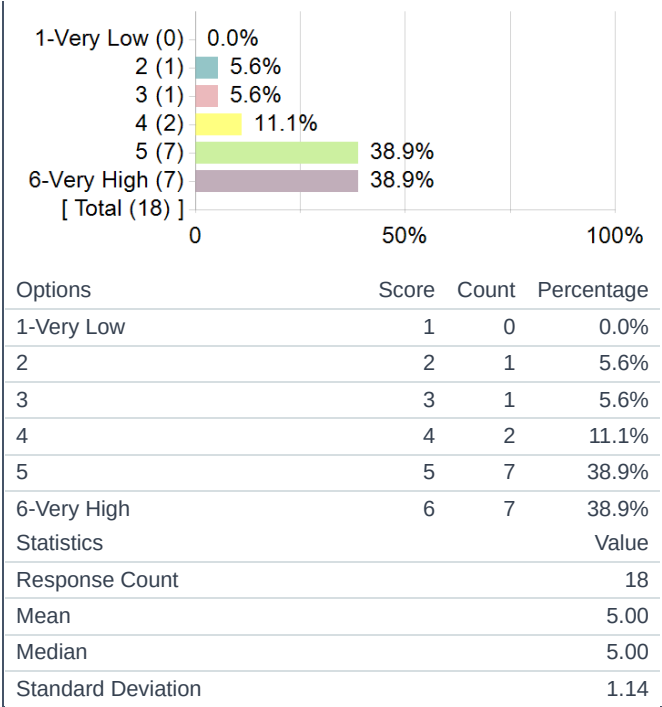
Provide an overall rating of the course.

Provide an overall rating of the course.



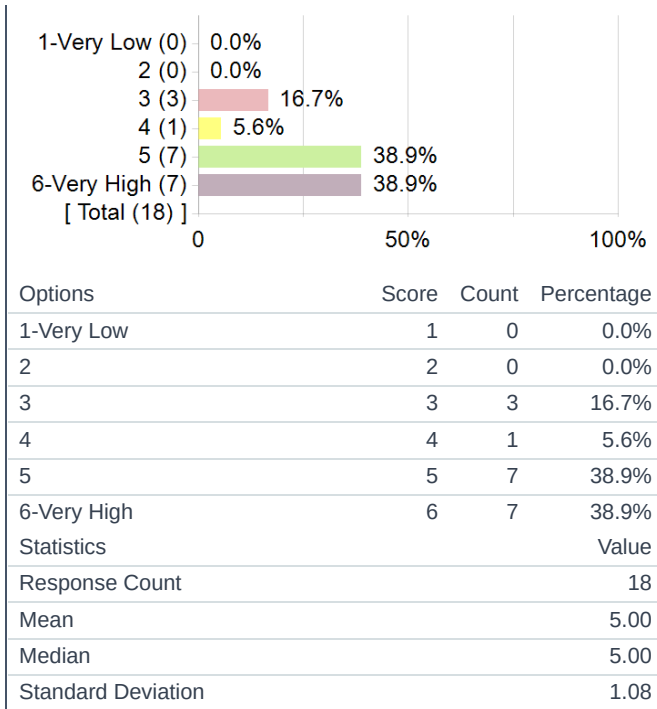
Estimate how much you learned in the course.

Estimate how much you learned in the course.

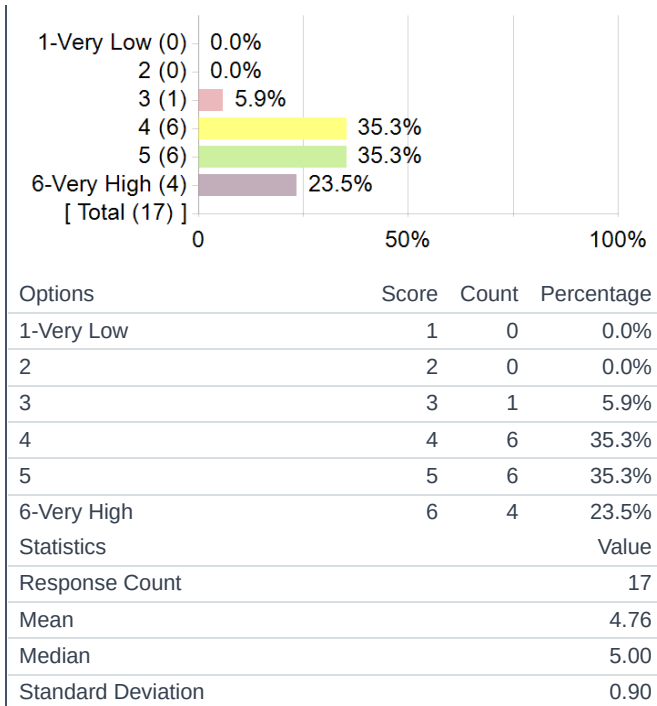


Rate the effectiveness of the course in challenging you intellectually.

Rate the effectiveness of the course in challenging you intellectually.

**Rate the instructional materials (texts, audiovisual materials, etc.) used in this course.**

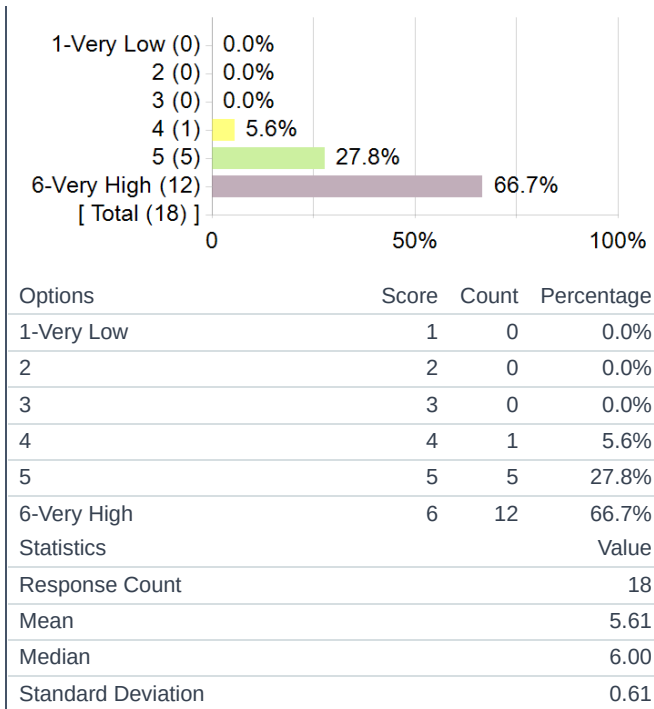
Rate the instructional materials (texts, audiovisual materials, etc.) used in this course.



INSTRUCTOR QUESTIONS

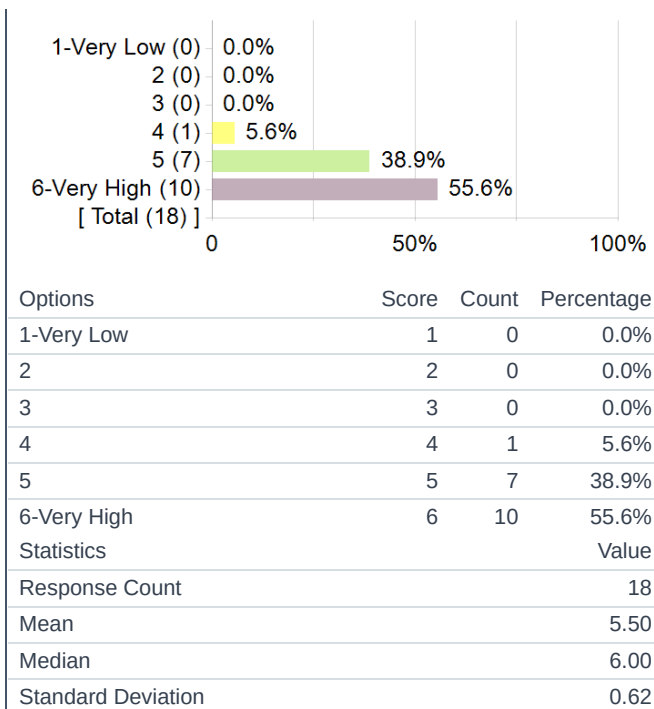
Provide an overall rating of the instruction.

Provide an overall rating of the instruction.



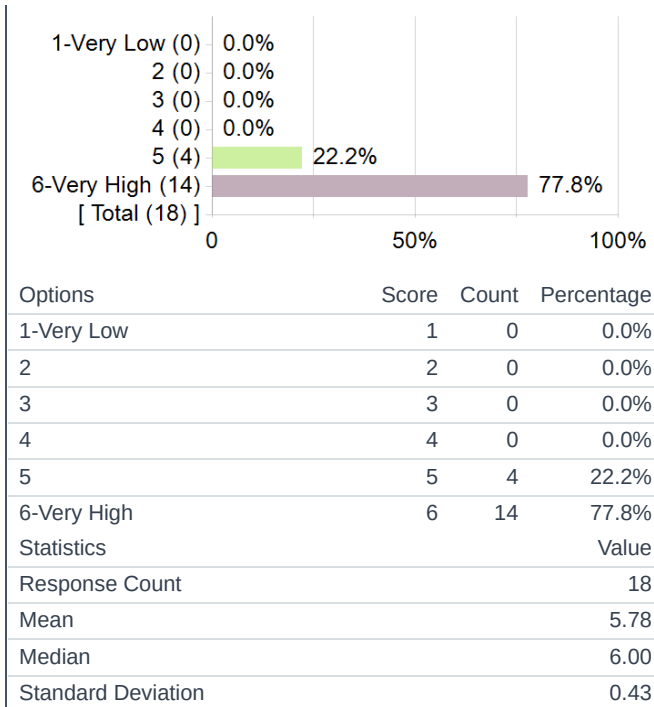
Rate the effectiveness of the instructor in stimulating your interest in the subject.

Rate the effectiveness of the instructor in stimulating your interest in the subject.

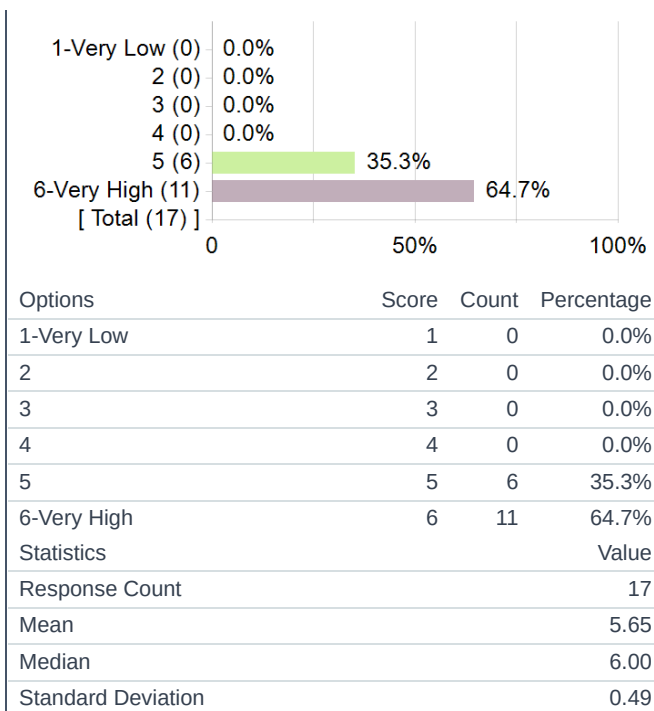


Rate how well prepared the instructor was for the class.

Rate how well prepared the instructor was for the class.

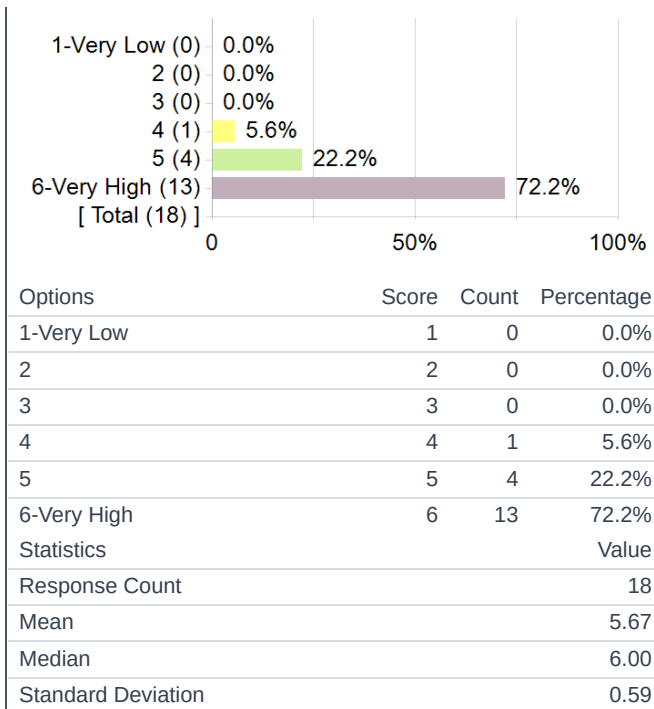
**Rate the effectiveness with which the instructor communicated course content and ideas.**

Rate the effectiveness with which the instructor communicated course content and ideas.

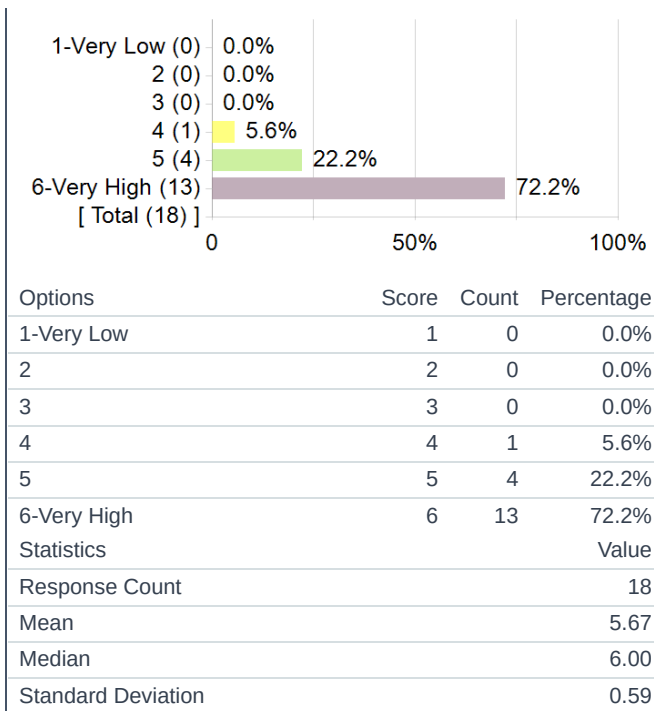


Rate the instructor's enthusiasm in teaching this class.

Rate the instructor's enthusiasm in teaching this class.

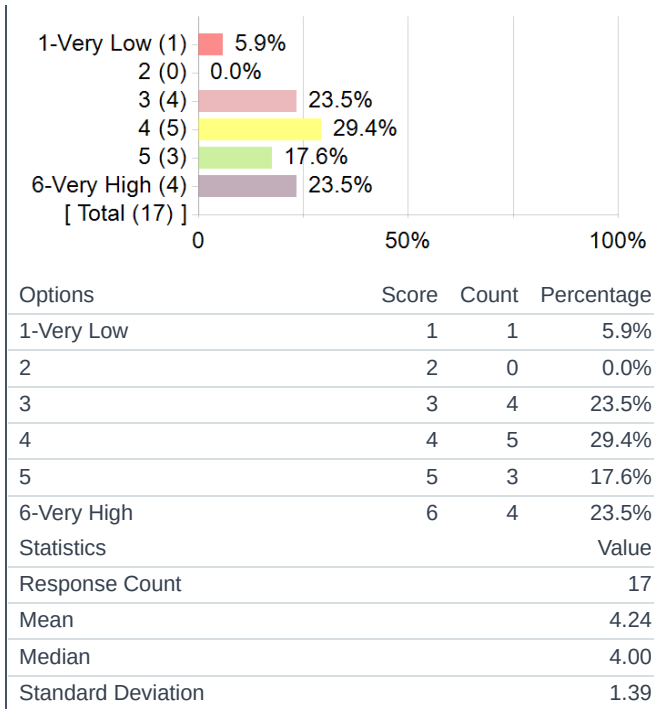
**Rate the usefulness of HW.**

Rate the usefulness of HW.

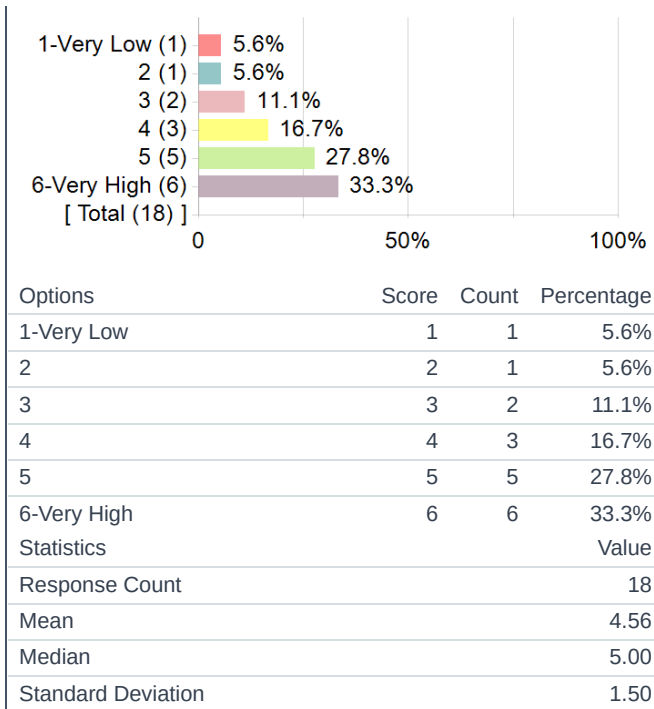


Rate the usefulness of discussion worksheets.

Rate the usefulness of discussion worksheets.

**Rate the usefulness of zyBooks.**

Rate the usefulness of zyBooks.



OPEN-ENDED QUESTIONS

Did the course help you learn? Why or why not?

Comments
Yes. The homeworks were well designed and the online textbook was good practice.
Yes. I had taken a very similar course in high school, so I thought that this course would be useless. While the first few weeks of the course were certainly redundant, the following weeks began to introduce more complex topics. In addition, the discussion worksheets addressed topics that I thought would be way beyond the scope of the class, yet ended up being completely doable.
Yes the course was very well taught
Yes. Apurva is a great professor.
The course touched on a wide breadth of important foundational topics in higher maths in an approachable and friendly way.
Yes it helped me learn. The professor was great and made every effort to help students who were struggling. The lectures went side by side with chapters from the textbook, which made it easy to grasp the class content.
I already knew pretty much everything from this course since I already took CS 212. This course definitely helped me reinforce the material though.
Very much. Great lectures, covered tons of material, lots of support for the more difficult sections.

Please summarize your reaction to this course focusing on the aspects that were most important to you.

Comments

Good class. You learn a lot about proofs and how to structure them. Apurva is enthusiastic and a good teacher and genuinely excited about the class so he was great. If you're taking this class you probably have to. If you don't have to take it, then I recommend it if you're REALLY interested in math proofs. Two midterms, weekly homeworks that office hours helped with, no final, hard discussion sheet every week and all of them are due at the end of the quarter.

This class was a really good introduction to all the basic proof techniques and how to use them, and I'm glad I took it before other higher-level math classes because I feel like I'll actually know how to explain my thoughts now.

I will preface by saying that I took a very similar course in high school, so I was already familiar with the proof methods and basic set theory covered in this course. I was mostly taking this course because it is a prerequisite for a lot of more advanced math courses. However, I found that the course was actually quite interesting. In particular, the discussion worksheets had us work through topics that I thought would be way beyond the scope of the class, yet ended up being completely doable.

Also, Apurva is a great professor, and he really helped make the class enjoyable. He learned all of our names, and he was super approachable. His weekly office hours were super helpful for working through the homework and discussion worksheets. His lectures were really engaging, as he asked a lot of questions for the students to answer and work through.

Finally, there were only two exams (neither of which was cumulative), and they were both quite simple. This was nice, as I felt like I didn't have to stress about the exams. The questions were all similar to textbook problems (and he told us this ahead of time), so we knew exactly what to study for each exam.

Take this course with Apurva if you can, he's fairly accommodating and a fun lecturer. Homework and textbook problems were a big portion of the grade, but both completely doable with a little foresight (take advantage of office hours) and a careful eye to look over proofs. The most tedious portion of the course is the discussion worksheets due at the end of the quarter in lieu of a final, which have to be LaTeXed and are assessed for correctness, but otherwise an A is very achievable with some commitment.

Took the class because it is a prerequisite to most 300 level classes and it provided a great basis for the rest of mathematics as a whole

Apurva is amazing! Take a math class with him if you can. There is one written homework every week, a midterm, and a final. An A is achievable if you work hard enough for it

Professor Apurva was fantastic, I would definitely take the course with him if he teaches again! The class itself was well designed, and you definitely improve in proof writing throughout the quarter, both from homeworks and discussions. My biggest tip would be to do the discussions as they are handed out, I waited until the final deadline, so I had to spend 3 days simply solving discussion problems – would not recommend (they are also required to be written in LaTeX).

What an amazing class, what an amazing professor. If you want to take any math class here, do it with Nakade. He cares so much about his teaching and students. I stopped going to half my classes midway through the quarter, but never skipped Math 300 lectures because of how he kept us engaged in the material. 2 midterms, no final: first midterm was great but second one was harder just because the difficulty of the material ramped up. He is very clear on what you'll be tested on. Discussion worksheets were much more difficult than the homeworks, but if you know people in the class and go to office hours, you'll do fine.

Solid course, although having full-fledged discussion worksheets that were very difficult to complete within the given time, on top of the written assignments, I thought was a bit much. MATH 300-0 is a quick run-through of a lot of foundational topics in higher maths. I think it's worth taking for the logic part alone, but you probably won't need to take this course before doing other 300-level courses.

Pretty challenging "Intro to Proofs" class. Apurva is great and is more than willing to help students who are struggling. However, I do feel like the discussions and homework were unnecessarily hard, to the point where I had to sit in office hours every week. Still, it is a rewarding class to take because you learn a lot of new topics and are challenged when trying to understand difficult concepts.

This was a decent course. The discussion sections were not very good and felt very grindy. Also the online textbook felt grindy and was way too easy compared to the difficult weekly homework assignments. The midterms had way too many questions on them such that it was impossible to finish in the allotted time. However, the lectures were very good and engaging.

Great course. Covered really interesting material and set me up well for more math major courses in the future. Lectures were all interesting and helpful.

What are the primary teaching strengths of the instructor?

Comments
Super clear communicator. Assisted with class material a ton, super useful during office hours.
He was very encouraging and enthusiastic and made me more comfortable participating and asking questions in class which was great. Office hours were super relaxed and helpful so I felt really comfortable going when I often don't feel comfortable going to professor's office hours.
He was clearly quite knowledgeable and interested in the topics. His lectures were very engaging, as he asked a lot of questions and encouraged student participation. I also liked that he learned everyone's names, as it made me feel like he really cared about us and our success in the course. He was super approachable, and I felt like I could ask him for help both with course material and with other topics.
He is super relatable and has a vast knowledge of math that helps provide clarity to a very broad class
Apurva make a point to get to know his students and challenge them while maintaining a comfortable learning environment. He loves what he teaches and tries to get his students to love it too.
Friendly and well-prepared. Great questions on the worksheets and homeworks.
Is very knowledgeable about the class content and often goes on "asides" to introduce topics he finds interesting. In this way, he makes students engaged. He is also very helpful during office hours and will do his best to answer questions.
Apurva is a very down-to-earth person and a great lecturer. Overall he was enthusiastic and helpful. It's also very obvious that he is super into math.

What are the primary weaknesses, if any, of the instruction?

Comments
Assumes the students understand things too quickly.
None
None
NA
NONE!
Could be a bit inflexible. Even with the course policies having some built-in leniency, laying out "no exception" rules otherwise for a variety of assignments, exams, etc., is I believe unnecessarily harsh for people who may have 2+ outstanding events and/or emergencies during the quarter. Would be best to just consider things case-by-case.
n/a
It was pretty evident that he was rather burnt out towards the end because his enthusiasm dwindled, but I can't really blame him for that. Sometimes he would be annoying when asked questions and just kind of repeat "think about it."

Can you offer suggestions for improvement?

Comments
This is super minor. He takes notes during class on his iPad which is great for changing colors and learning, but it means he can move around his notes and easily change things and switch whole sections of notes around. I was using pen and paper and couldn't do this so sometimes my notes got messy or out of order. But this really was not a big problem.
NA
NOPE!
Maybe make the discussion worksheets shorter, so they can actually be done within 50 minutes in a collaborative setting.
n/a
No not really, I felt as if Apurva was great.

Suggest improvements to HW.

Comments
Good overall!
Homework was good. I really liked how each question built on the previous one until the final question was a complete proof using all the other aspects of the homework.
The HW was great.
n/a
The homeworks were great; I wouldn't say you need to change anything about them.
The hints were very helpful, sometimes I felt the need for one when there were no hints (very minor feedback and also a rare occurrence).

Suggest improvements to discussion worksheets.

Comments
Jumps from homework and lecture to the discussions are way too large.
They're really hard. Finishing them during section was always impossible. They were doable before the end of the quarter, but at some point they just become additional homeworks.
A bit too long, I thought! I think a lot of people just panicked near the end of the quarter and ended up not doing so well on them because they were too much to be done within the discussions, then it became just another HW on top of the existing HW and it was just.. stressful.
Make it easier. I found I was spending almost the same amount on discussion as I was on homework.
Literally just get rid of them and make the discussion sections time to work on the homework. Maybe add one or two questions to each homework as compensation.
They started getting very hard to complete during the section even with 4 people groups as they were quite intellectually challenging, and having to complete them later on without a group is not very efficient and I feel like it defeats the purpose of working with others
Too complicated. Often solutions given by Professor or TA feel like they are outside the scope of the course, which means solving them individually is impossible.

Suggest improvements to zyBooks.

Comments
Fine, but boring.
They were good.
I would personally rather an alternative that didn't require the \$60 rental of the textbook
I would completely remove zyBooks from the class and use a different textbook – perhaps "Book of Proof". It were almost entirely computational, and I don't think that it helped in my understanding of the material, I found the class notes more effective and felt that class alone sufficiently prepared me for the HWs and Discussion Worksheets, which I loved doing.
ZyBooks was cool but a bit overdone in my opinion. In the end I was a bit bored trying to click as fast as I could through things that I already understood. Maybe making only the challenge questions mandatory would be better.
n/a
I mean it wasn't that time consuming to click through all the boxes but it always felt like a grind to do so. Looking at the textbook during the homeworks to remember the concepts was much more beneficial and useful than just clicking the boxes every week.