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## Report Comments

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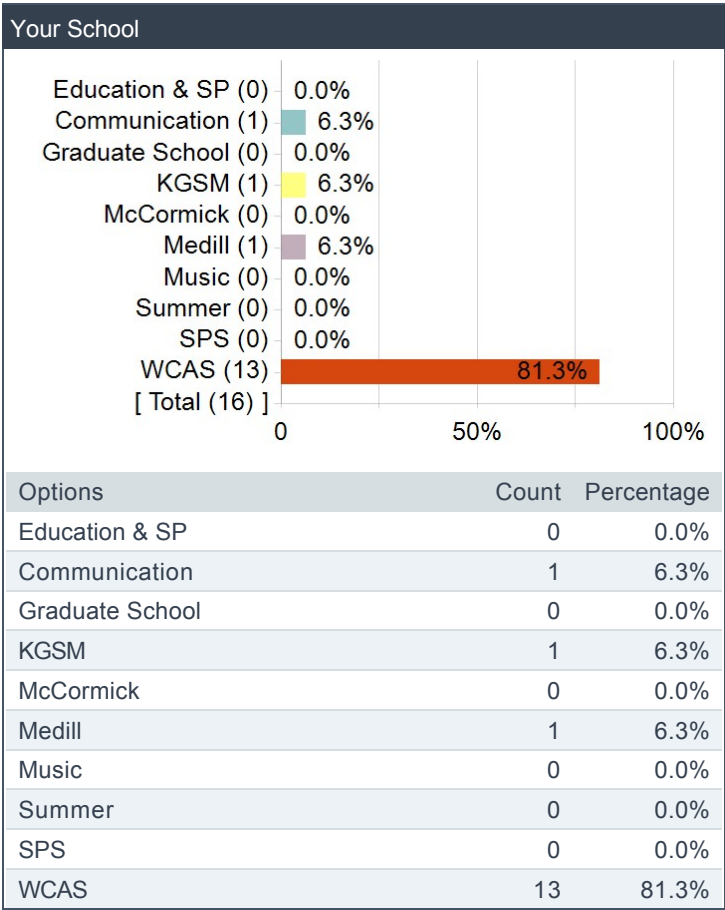
Northwestern University

Course Evaluations

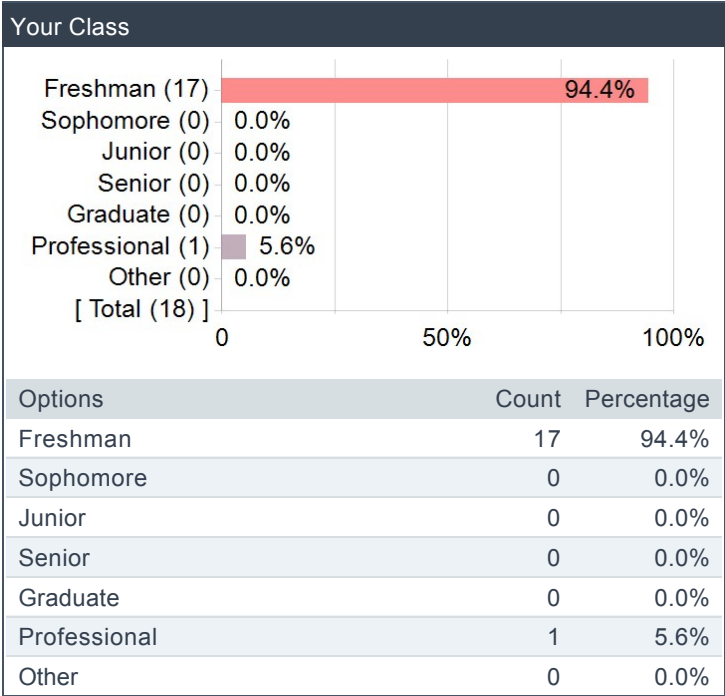
Instructor	Course
Apurva Nakade	MATH_290-1_41: MENU Linear Alg/Multivar Calc

DEMOGRAPHICS

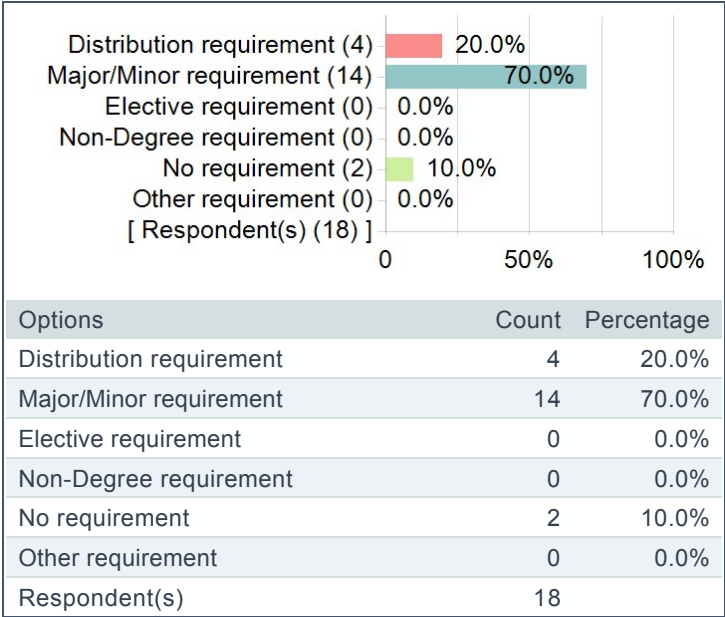
Your School



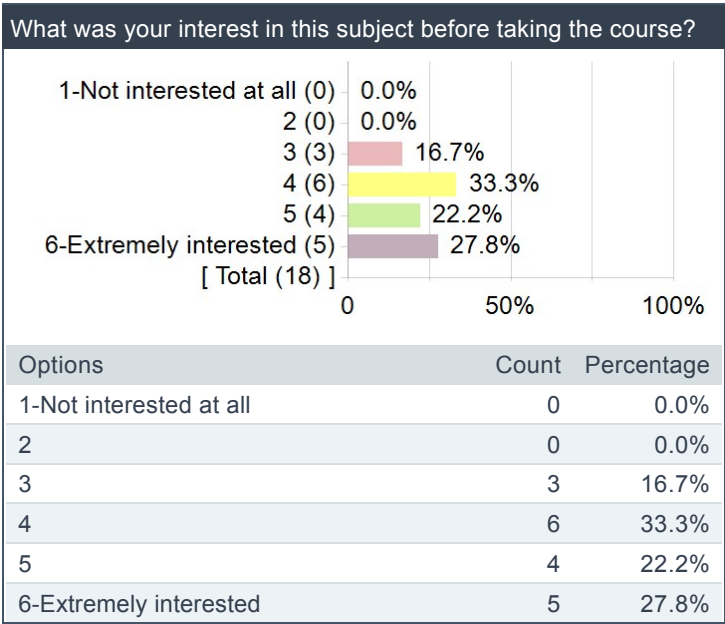
Your Class



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

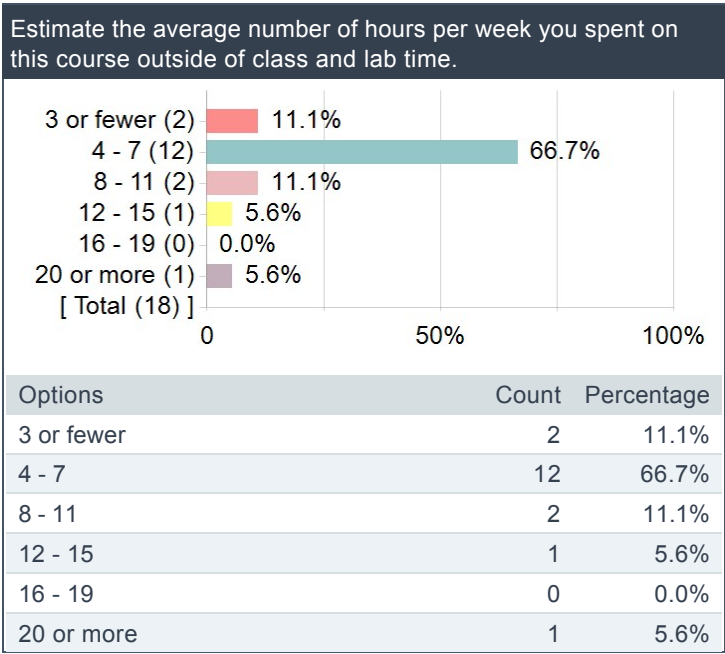


What was your Interest in this subject before taking the course?



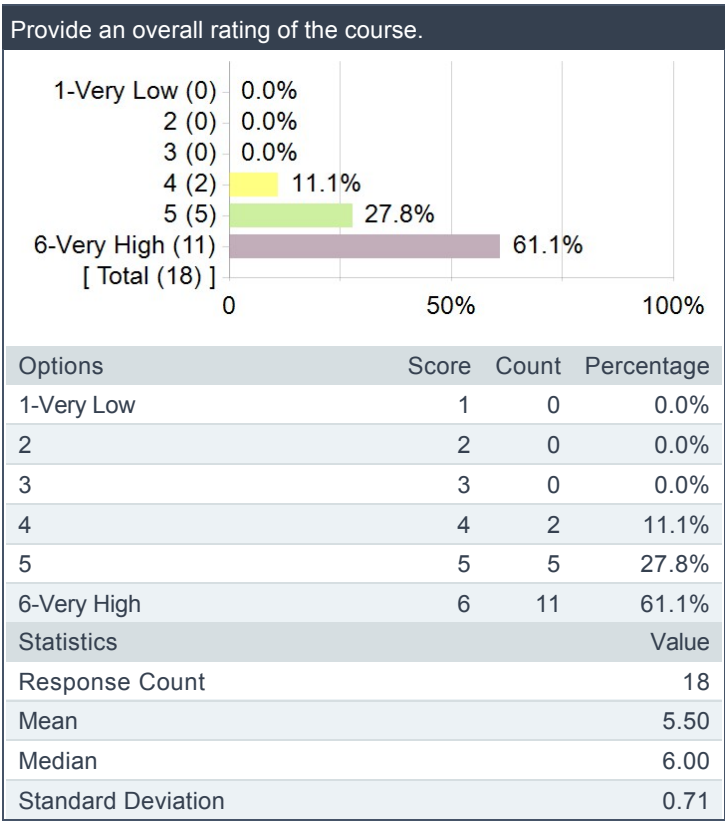
TIME-SURVEY QUESTION

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

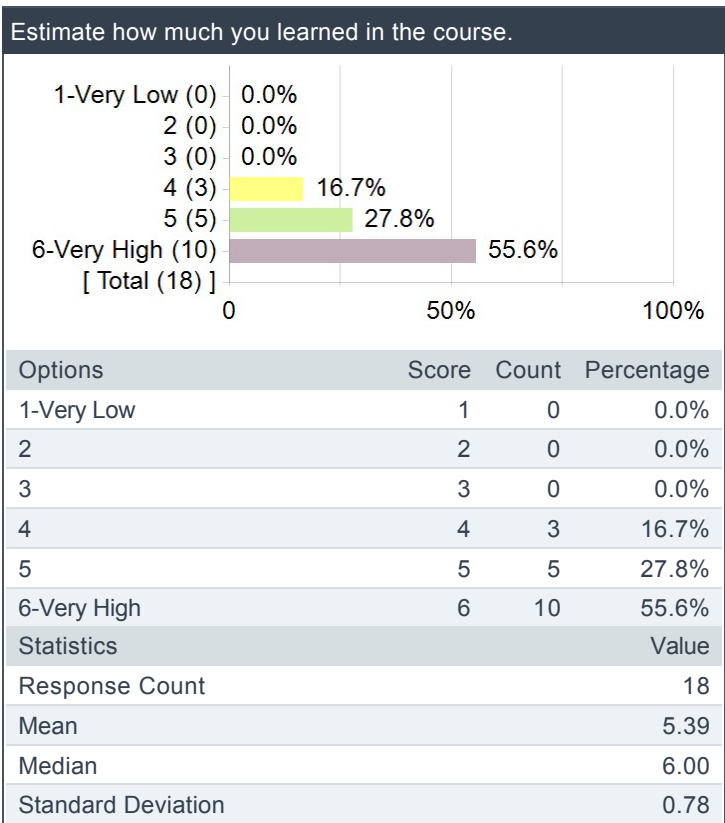


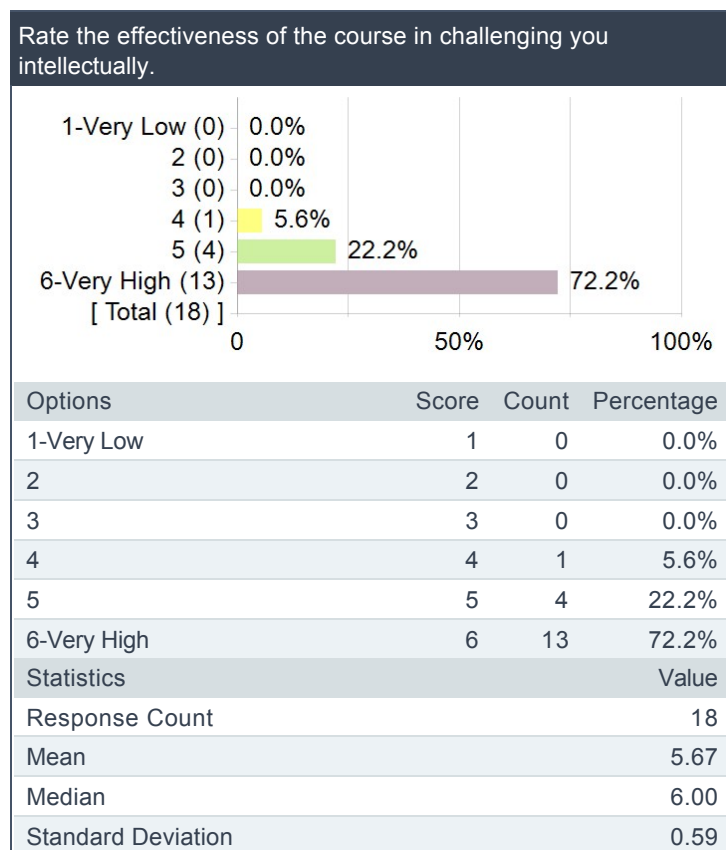
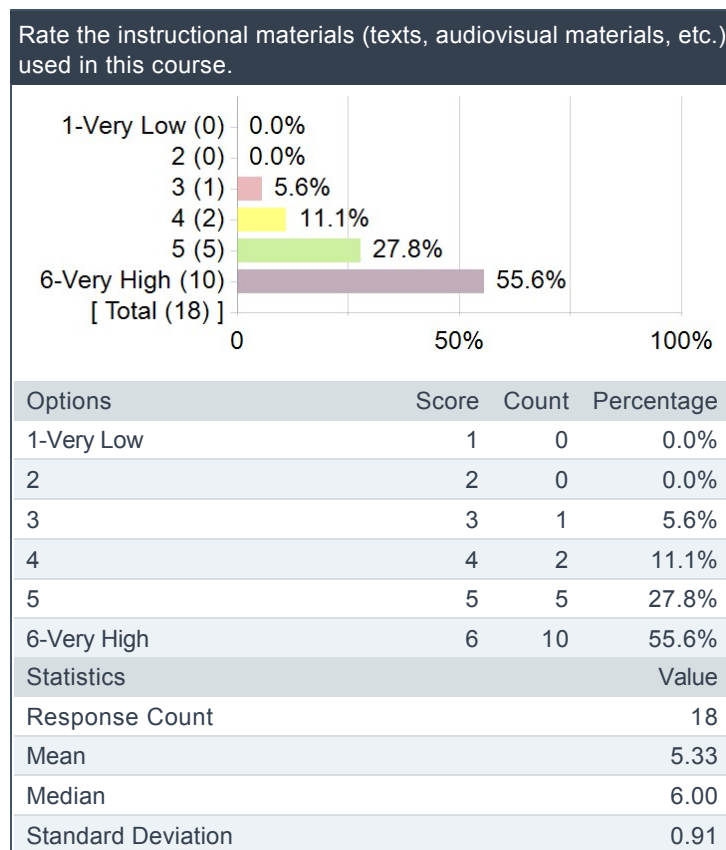
COURSE QUESTIONS

Provide an overall rating of the course.



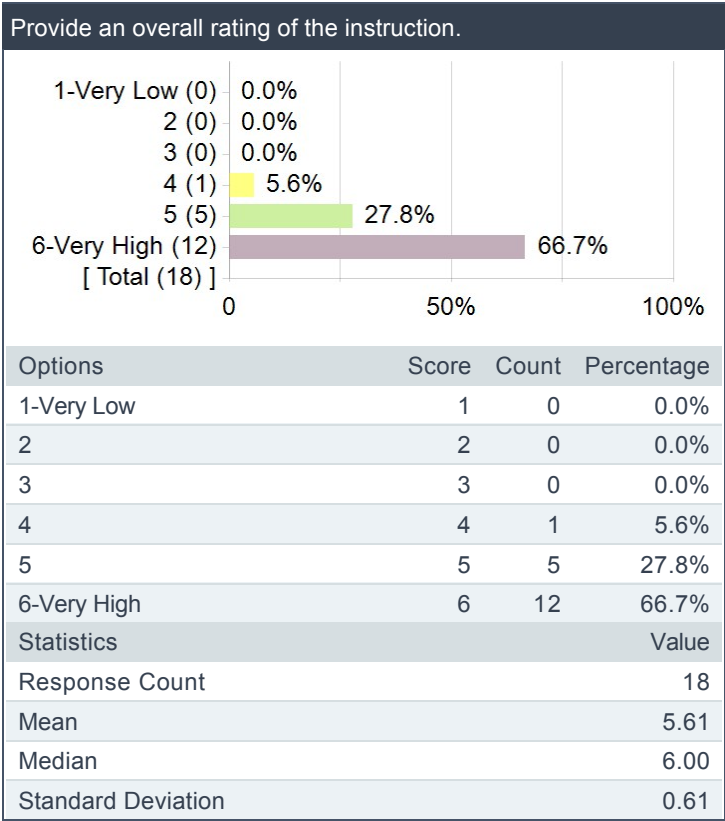
Estimate how much you learned in the course.



**Rate the effectiveness of the course in challenging you intellectually.****Rate the instructional materials (texts, audiovisual materials, etc.) used in this course.**

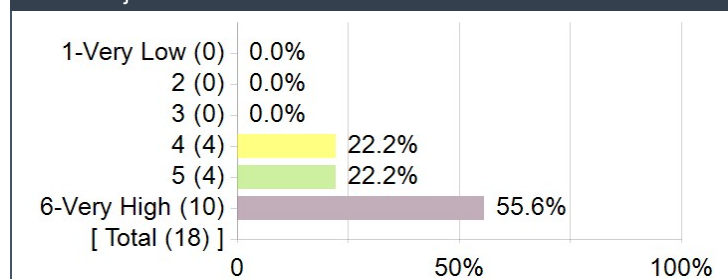
INSTRUCTOR QUESTIONS

Provide an overall rating of the instruction.



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

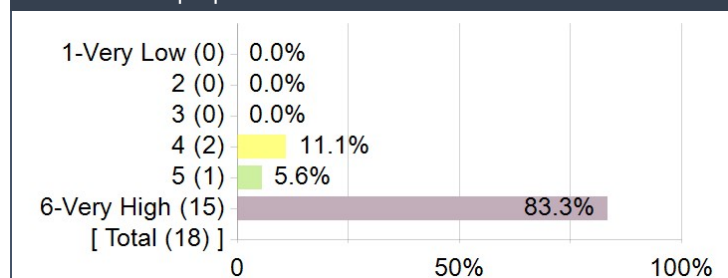
Rate the effectiveness of the instructor in stimulating your interest in the subject.



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	0	0.0%
3	3	0	0.0%
4	4	4	22.2%
5	5	4	22.2%
6-Very High	6	10	55.6%
Statistics			Value
Response Count			18
Mean			5.33
Median			6.00
Standard Deviation			0.84

**Rate how well prepared the instructor was for the class.**

Rate how well prepared the instructor was for the class.

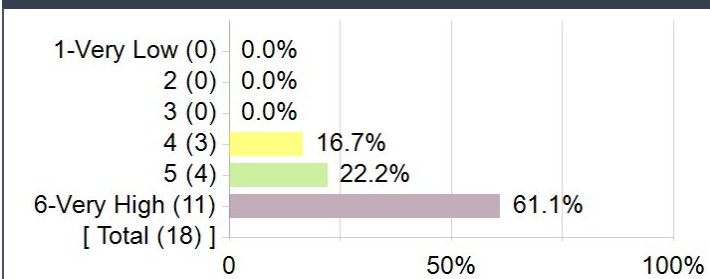


Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	0	0.0%
3	3	0	0.0%
4	4	2	11.1%
5	5	1	5.6%
6-Very High	6	15	83.3%
Statistics			Value
Response Count			18
Mean			5.72
Median			6.00
Standard Deviation			0.67



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

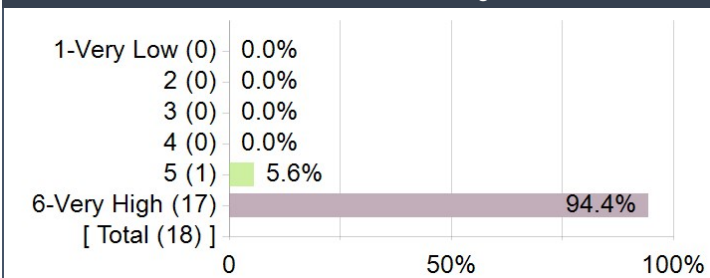
Rate the effectiveness with which the instructor communicated course content and ideas.



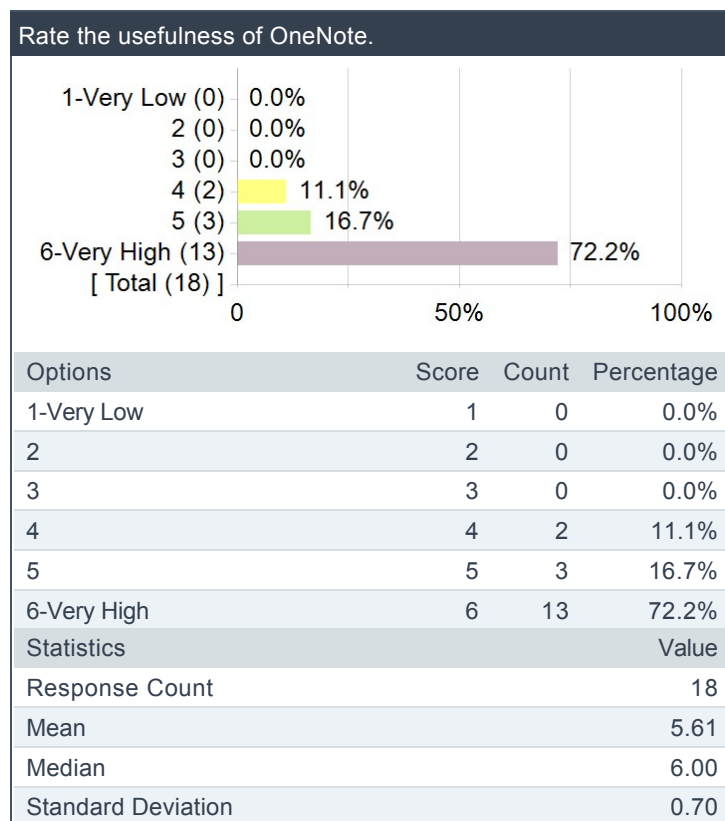
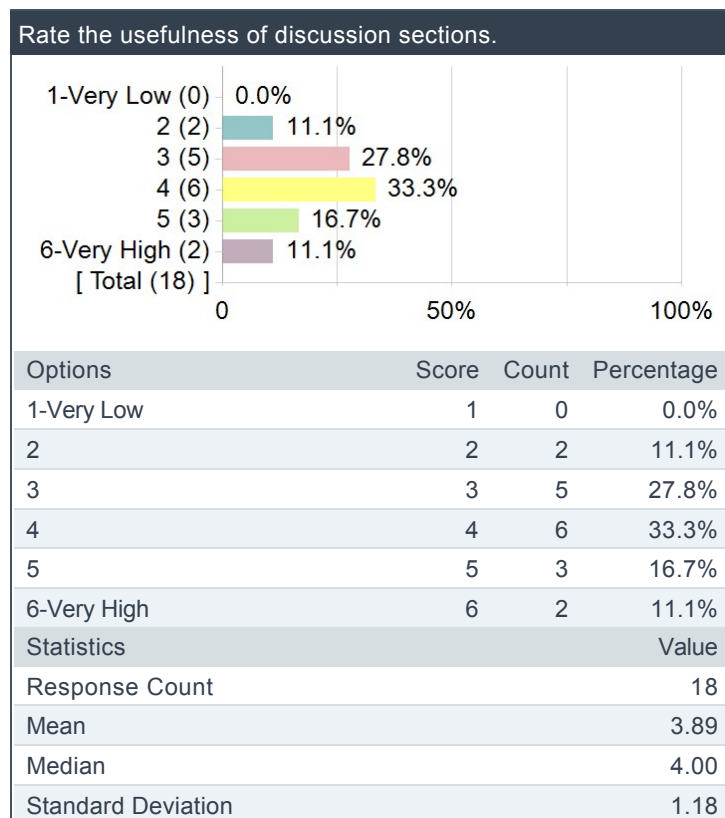
Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	0	0.0%
3	3	0	0.0%
4	4	3	16.7%
5	5	4	22.2%
6-Very High	6	11	61.1%
Statistics			Value
Response Count			18
Mean			5.44
Median			6.00
Standard Deviation			0.78

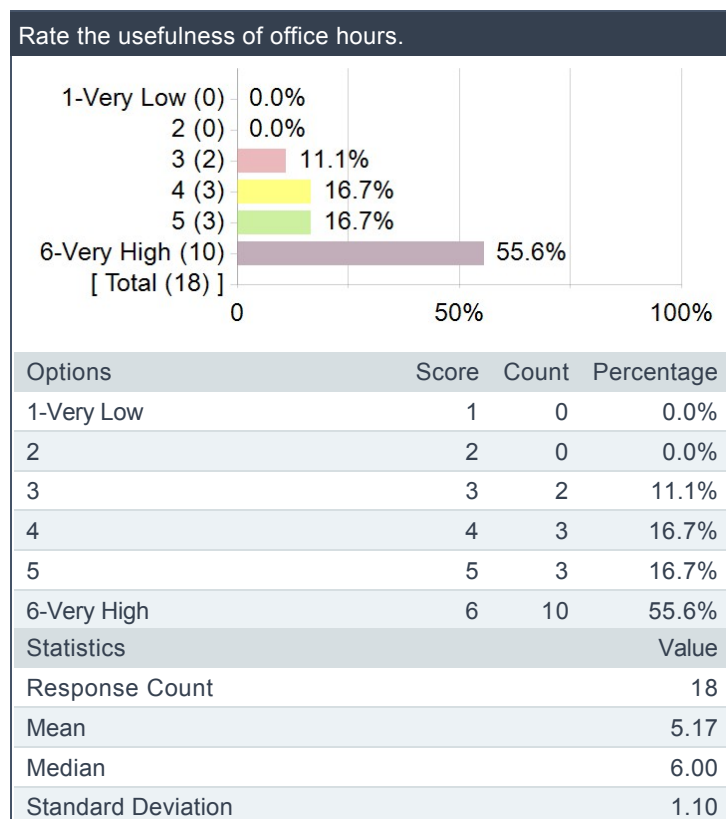
**Rate the instructor's enthusiasm in teaching this class.**

Rate the instructor's enthusiasm in teaching this class.



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	0	0.0%
3	3	0	0.0%
4	4	0	0.0%
5	5	1	5.6%
6-Very High	6	17	94.4%
Statistics			Value
Response Count			18
Mean			5.94
Median			6.00
Standard Deviation			0.24

**Rate the usefulness of OneNote.****Rate the usefulness of discussion sections.**

**Rate the usefulness of office hours.****OPEN-ENDED QUESTIONS****Did the course help you learn? Why or why not?**

Comments
Yes, it was challenging.
I had taken a similar linear algebra course in high school so content-wise, I did not learn much new material. However, the question styles in this class were completely different and have taught me a new way of thinking about math.
Yes
Yes, because I learned a lot of self-discipline, responsibility, and patience with teaching myself course material.
Yes the lectures and homework assignments gave me a better understanding of the material
Apurva is a great teacher and he really spends a lot of time in making sure we understood the material. The material itself was also really well planned out where it was enough to know and not too much. I definitely learned a lot and I'm grateful that Apurva was my instructor.
This course helped me learn a lot. Apurva is a great professor, and the course is very good at challenging you intellectually as well. Everything about the class is pretty much designed to get you to learn the concepts in a thorough and important way – miniquizzes aren't worth much of your grade but help you reinforce concepts, homework is worth a lot of your grade but collaboration and reaching out for help is encouraged, and previous years' midterms are available to you to help you prepare and study.
Yes, I now feel like I understand the material a lot, and not just on a surface level, but also how it can be applied. Definitions were constantly given and the notes seemed to emphasize key points like theorems
yes! TAs and professors were very accessible, very helpful. I can tell that they have passion for the subject and try their best to help us fall in love with it too. I look forward to taking the next class in the sequence, and I hope to take more classes like this throughout college.
Yes, this course helped me learn a lot. I had to basically rethink how to do math as a whole, and it's really helped me understand these more complex concepts.

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

Comments
Reasonably fast pacing over linear algebra. Nothing that can't be tackled by showing up during office hours.
I think the main difference between this MENU sequence and the 240 course is that this course trains you to answer true/false, always/sometimes/never, and find examples questions in a way that my previous math classes haven't done before. Just getting used to how to answer these proof/example questions was a learning curve at first.
290–1 was definitely the perfect challenge for me, and I really appreciate being able to put in the work and reap the rewards. I'd recommend it for anyone who knows they're comfortable with learning & executing regular computation questions and wants to go a little further into solving proof/example questions.
I especially liked the small class size (we made a class group chat which was super helpful for discussing homework questions!) and it also made it a lot easier for the professor learn our names and answer our questions during class. I was also more comfortable going to office hours for this class than my other large lecture classes because of our small class size.
This course was tough, but enjoyable. I especially liked the smaller class size because it helped me form study groups and get to know my peers better. Additionally, Apurva is a great instructor with easy to understand lectures/lecture notes. The questions he poses during class allowed us to think for ourselves through new concepts before he gave us the answers. He is also super helpful when you ask for feedback on a homework assignment/test, or if you just need some clarification about the content.
Apurva is a great teacher! I love the way his notes for the entire quarter are all organized very neatly in OneNote, making it easy for students to go back and review past material. I really like the weekly homework and quiz schedule too, which helped me stay on track and practice the skills worked on in class. This is definitely not an easy class, and moves pretty fast, but Apurva is always willing to help!
this class was hard. if your high school math classes were not heavy on theory/math jargon, you're going to have a very hard time adjusting at first. that being said, it gets better. the class stays hard, but you get better at it if that makes sense. apurva is a nice and effective instructor, but he can be a little bit forward in his critiques of your work, and that made it a little hard for me to feel comfortable asking questions at times, but that might just have been an ego thing for me. the tas weren't very effective in my opinion, but in fairness they only have 30 minutes a week with you in class before they give the quizzes out. i say take this class if you're interested in math because you will learn very quickly whether higher level math is for you or not. it certainly is not for me, but i'm glad i challenged myself with this class regardless
I am not a smart person. In fact, I was definitely on the far lower end of my class. I do, however, love math and learning, which this course allowed me to do. Apurva is a very good teacher. His office hours were extremely helpful and he always made an effort to ensure that everyone in class was on the same page. It was pretty frustrating when my classmates seemed to have a solid grasp on the course while I was always a week behind, but the fact that I was still able to enjoy the class at all while being behind is a testament to Apurva's strength as a professor. I essentially went to class to learn what I had to teach myself for the homework. Exams were brutal, and the bar graphs of scores were... humbling – almost comical. But I love math and I love Apurva. I'm not sure if I'm going to continue, but I'm grateful for the experience at the very least.
Teaching is great! Apurva has helpful lectures and his notes are really good. The course itself is challenging and the tests are hard. Instead of only computation questions on the tests, half of every test is more proof–based questions that can be pretty tricky. Unless you are amazing at math you will need to put time in outside of class to study the material. I recommend going to office hours as it is a productive environment for completing the weekly homework assignments and you can receive help from the teacher. MENU is a great community and I recommend it if you are looking for a challenge and a strong mathematical foundation.
The class was a lot of fun. Office hours was probably the best because we would go in there even if we didn't have any questions, but to talk to Apurva and to our classmates. I learned a lot in this class. I thought at first I wouldn't be able to handle the work and pressure, but literally everybody is in the same boat. The instructors (Apurva and Harris) are really helpful and the TA's do their best to answer questions as well. I really enjoyed this class and I can't wait to take the second quarter sequence soon. Thanks!
Overall, Apurva was amazing as a professor. His knowledge over the course's material is extremely thorough, but he is also great at explaining concepts in a way that isn't very difficult to understand. His lectures are great, and he posts all of his notes on OneNote so you can look at them even if you miss a lecture. Everything you're expected to know on the exams is covered by the lectures and homework assignments.
In terms of workload, almost all of this class's time is based around the homework, which is worth 25% of your total grade. While that seems really high, the homework is pretty difficult. It's assigned once a week with a bunch of problems related to last week's lectures and it usually took me between 3–6 hours to do depending on the material. However, the homework really does make your understanding a lot better, and the exam questions are largely related to the homework. Your lowest homework grade is dropped at the end of the quarter.
The class also has discussion sections once a week that have a mini–quiz in them. These are worth very little (9% of your grade in total) but they help to encourage you to stay up–to–date in reviewing material before midterms and such.
Finally, the midterms in this class are a bit scary, but as long as you prepare well for them, you can do pretty well (additionally, because homework/quizzes take up a really big chunk of your grade, you don't necessarily have to do as well). They're only an hour long so the time crunch is something that makes a big difference. I'd say the actual problems on them aren't too difficult, but the

Comments
<p>stress of time pressure makes it feel like you could do a lot worse than how prepared you actually feel. Additionally, Apurva posts previous years' exams on Canvas, so it's easy to figure out what the midterms will look like.</p>
<p>Overall, I'd really recommend trying this class out. If it's not for you, I think there's an option to drop out in the first 2 weeks which will just place you in either 230 or 240. If it is, then you'll learn a lot (A LOT) while also maybe changing your perspective about math as a subject as well.</p>
<p>PS: I HIGHLY RECOMMEND GOING TO OFFICE HOURS! Apurva is super knowledgeable and if there's any homework questions you don't understand or concepts you don't get he will explain them to you very well pretty much one-on-one</p>
<p>Ultimately, while the homework can be a lot at points, it is doable—especially if you make friends in the class and are able to ask clarifying questions. Quizzes are not too much to worry about; if you could do the homework then you can do the quizzes. The midterms can be difficult—review key theorems and definitions before. Practice answering the a/s/n and t/f, because they make up a lot of the midterms. Take readable notes, and I suggest color coding or something so that you can easily find definitions and theorems to look back on while studying or working.</p>
<p>I enjoyed this deeper dive into linalg. I grew to really enjoy and understand the essence of linear algebra through this course; it was my favorite class this quarter, and I am so glad I chose to take this class. The class didn't require too much effort to understand, the weekly psets only took like an hr or two (it was around 10 problems per week I think?), quizzes and tests were reflective of classwork and homework. Overall, the class wasn't as scary of a class as others described it to be.</p>
<p>ALSO I had Apurva and he was amazing. I went to one of Harris' OH, and he was really helpful too. In general, I think the MENU TAs and profs are stellar. tbh, I didn't get a chance to really hear Apurva explaining things outside of class. At Apurva OH, it was more like people gathering and solving problems together and asking Apurva if the answers right LOL Yuxuan office hours were interesting. Sometimes his explanations went over my head, but his OHs were the most helpful if I was stuck on a problem. When I went to Harris OH, he gave geometric explanations behind the number crunching. I personally thought Harris's approach was more intuitive to understand linear algebra as a whole, but Apurva's/Yuxuan's explanations made it easier to know how to respond concretely on test questions.</p>
<p>This is a very challenging class that will require you to study the materials outside of class, but it's a very rewarding class as well. Apurva is a god and is very helpful. He really pushes you to try and figure out concepts on your own, but will also give hints whenever necessary. I would recommend taking this class if you really enjoy doing math, and/or could see it being used in your major or minor. However, as previously stated, it is not easy by any means, so if you don't plan on taking time outside of class to really work on the material, then don't take this class. The homework consists of weekly assignments with a handful of questions from the textbook. These usually take 3–5 hours to complete total, and can be fairly challenging. There's also weekly quizzes, which are useful benchmarks only worth 9% of your grade. My biggest piece of advice is to always go to office hours, as that's where I've been able to really understand most of the concepts. Even if you're just going to work on homework, it's still beneficial to regularly show up. Also, do the practice exams. Overall, it's a hard class, but it's manageable if you take time to really put effort into it.</p>

What are the primary teaching strengths of the instructor?

Comments
ability to answer a question clearly
<ul style="list-style-type: none"> <li>– Lectures were really easy to understand</li> <li>– Encouraged us to think for ourselves</li> <li>– Set aside time to review content with us before tests</li> </ul>
Well–organized notes, Always willing to help, Shows that he really cares about students' learning
organized, articulate
very engaging, caring, knowledgeable, helpful.
Challenging students to find the answer by themselves and being supportive by giving advice and help when needed.
He's a very nice guy and really fun to talk to. He also makes the class and content really enjoyable. We would often tell jokes in office hours or tell stories and it was great hearing him laugh and seeing everybody enjoy being there. He is very passionate about Math and truly understands the material.
Apurva is great at explaining concepts and he is very knowledgeable about every subject in the class as well. Additionally, he's great at teaching and explaining mistakes to you while not making you feel bad about it.
Lots of practice problems helped comprehension. Also, I think it was really helpful at the beginning of classes when you would do a problem based on previous knowledge, then the lecture would use that problem as an example of a definition or to demonstrate a new method. It made the lecture more cohesive with previous lectures.
<ul style="list-style-type: none"> <li>– loved his one note thing</li> <li>– lays out the topics very logically</li> <li>– very straightforward teaching style, organized</li> <li>– very down to earth man, he was very easy to talk to and ask questions</li> <li>– very willing to admit and own up if he were to make a minor error which was admirable.</li> </ul>
Apurva is a great professor who really cares about what he is teaching, and is very helpful. He doesn't sugarcoat things, and tells it how it is, but also tends to give really great advice and feedback.

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

Comments
none
We didn't go over the intuitive / geometric understanding to these linear algebra concepts, and I think I would have been able to grasp the concepts better if he had highlighted more of the intuitive / geometric understanding while introducing new concepts.
N/A
N/A
intimidating at times
none really. The course was really fast, but that's just a characteristic of the class.
Sometimes he can be a little confusing and explain a concept quickly without checking for understanding.
N/A
none
Sometimes the practice problems in the lectures would be too simplified, and when you got to the homework you would end up having a way more difficult question and it would be difficult to understand what to do. Wish there were more complex examples in some of the lectures, or more practice in the lectures with a/s/n or t/f
– couldn't have asked for a better prof for this course
None

**Can you offer suggestions for improvement?**

Comments
none
I found the content reviews we did of the previous class' material really helpful and suggest continuing that practice
N/A
Wish we had review worksheets to do for midterms or even homework. It would've help to further solidify my understanding of essential concepts and to give me experience with questions that may appear on assessments.
Making sure there is a conceptual understanding of a topic before moving on.
Nothing really. It was a great class, even though it was tough at times. I learned a lot. Thanks for your time and efforts, Apurva!
nope
none
n/a keep doing what you're great at!!! really enjoyed being in your class this quarter.
None

**Suggest improvements to the class format.**

Comments
None
– Continue using OneNote: was super helpful to keep lectures organized chronologically and by topic
N/A
None! Maybe a couple of group assignments would've bonded students better and made us feel comfortable reaching out to each other for help.
N/A
can't think of any
give some more examples of a/s/n and t/f in class example problems
maybe doing lecture and problems at the end of class so we don't need to rush through lecture
Discussion sections could have been more helpful.

**Suggest improvements to the discussion section format.**

Comments
None
– Provide practice problems to do in discussion, or on our own time (discussions felt more like office hours than anything else)
I wish quizzes were held during class instead so that entire discussion section can be used to go over topics or questions from homework.
Would've liked more review on previous topics.
The quizzes were a hassle sometimes but it was a great place to do problems, even though our TA, Yuxuan, was really confusing at times and just completely disorganized.
can't think of any
none
I liked the homework help part in the beginning of class which quizzes at the end. Tbh, though, I think the quizzes aren't that effective. If there are going to be quizzes in the future, I would like to know exactly which topics would be covered on the quizzes beforehand, like we do for exams. I think there was unnecessary stress added by the ambiguity of what would be covered on each quiz.
The discussion sections were not very helpful as the TA was always doing math way beyond anyone's understanding. He would solve problems differently than how we were expected to, which sometimes was helpful, but other times very confusing.

Suggest improvements to the office hours format.

Comments
None
N/A
None! office hours were my lord and savior this quarter.
Office hours was so much fun please don't change anything about it!
none
none
I liked how there were so many different ways OHs were conducted for this class. For example, there were Zoom OHs, large group OHs (Apurva's on Friday), smaller group OHs (Yuxuan's OH, Harris's OH), etc. I could choose what I wanted that week, and I appreciated the diversity of OH formats.
None