Northwestern

Individual Report for MATH_290-1_51: MENU Linear Alg/Multivar Calc (Apurva Nakade)

Project Title: **Course and Teacher Evaluations CTEC Fall 2022**

Courses Audience: **24**
Responses Received: **19**
Response Ratio: **79.2%**

Report Comments

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Creation Date: **Thursday, December 15, 2022**

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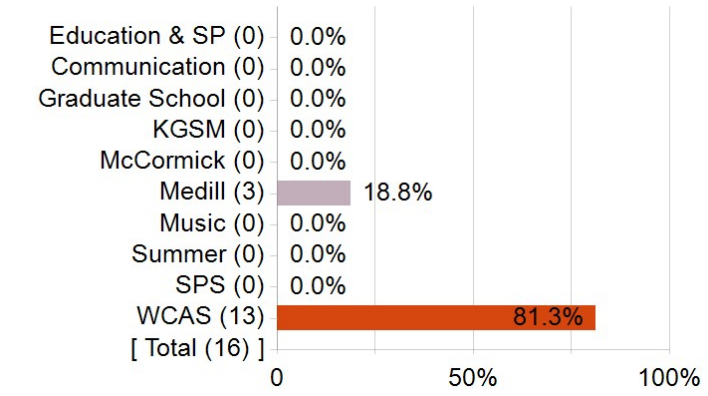
Course Evaluations

Instructor	Course
Apurva Nakade	**MATH_290-1_51: MENU Linear Alg/Multivar Calc**

DEMOGRAPHICS

Your School

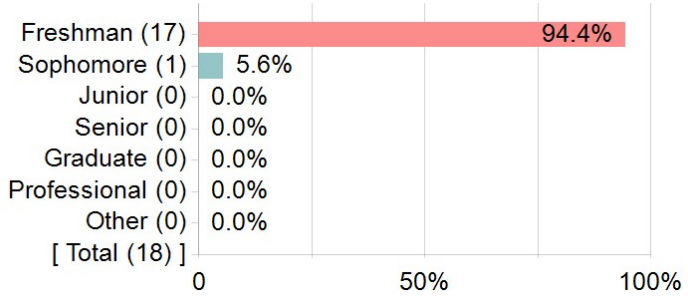
Your School



Options	Count	Percentage
Education & SP	0	0.0%
Communication	0	0.0%
Graduate School	0	0.0%
KGSM	0	0.0%
McCormick	0	0.0%
Medill	3	18.8%
Music	0	0.0%
Summer	0	0.0%
SPS	0	0.0%
WCAS	13	81.3%

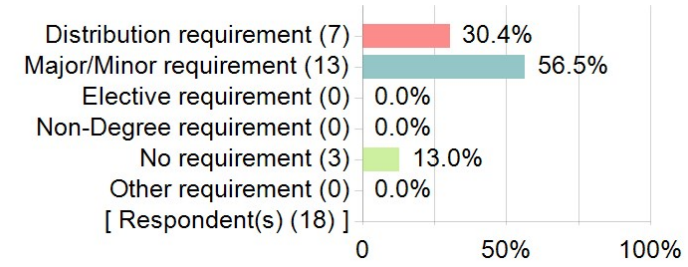
Your Class

Your Class



Options	Count	Percentage
Freshman	17	94.4%
Sophomore	1	5.6%
Junior	0	0.0%
Senior	0	0.0%
Graduate	0	0.0%
Professional	0	0.0%
Other	0	0.0%

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



Options	Count	Percentage
Distribution requirement	7	30.4%
Major/Minor requirement	13	56.5%
Elective requirement	0	0.0%
Non-Degree requirement	0	0.0%
No requirement	3	13.0%
Other requirement	0	0.0%
Respondent(s)	18	

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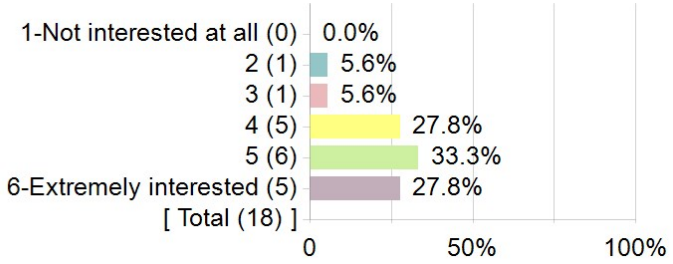
What was your Interest in this subject before taking the course?

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

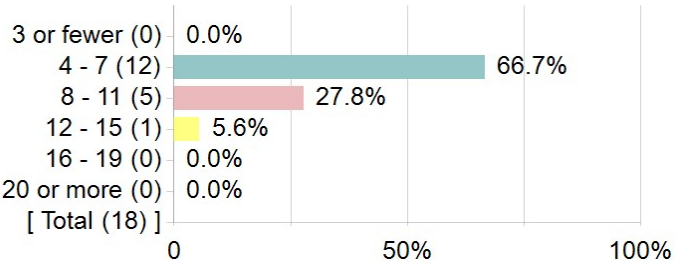


Options	Count	Percentage
1-Not interested at all	0	0.0%
2	1	5.6%
3	1	5.6%
4	5	27.8%
5	6	33.3%
6-Extremely interested	5	27.8%

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.



Options	Count	Percentage
3 or fewer	0	0.0%
4 - 7	12	66.7%
8 - 11	5	27.8%
12 - 15	1	5.6%
16 - 19	0	0.0%
20 or more	0	0.0%

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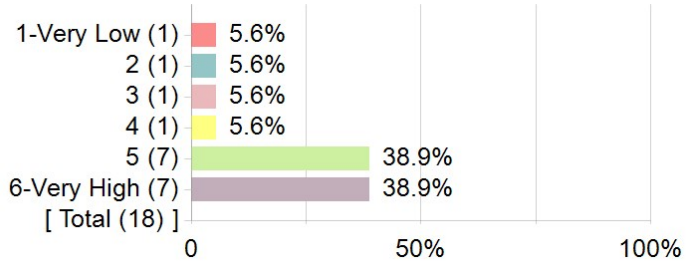
COURSE QUESTIONS

Provide an overall rating of the course.

Provide an overall rating of the course.

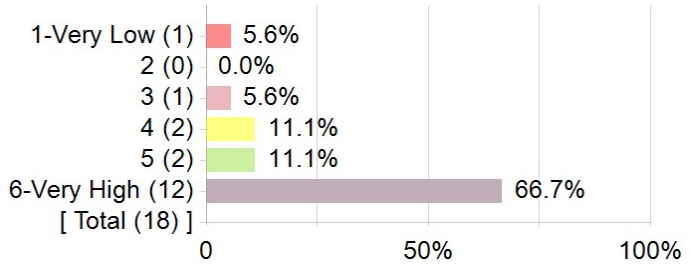


Options	Score	Count	Percentage
1-Very Low	1	1	5.6%
2	2	1	5.6%
3	3	1	5.6%
4	4	1	5.6%
5	5	7	38.9%
6-Very High	6	7	38.9%

Statistics	Value
Response Count	18
Mean	4.83
Median	5.00
Standard Deviation	1.47

Estimate how much you learned in the course.

Estimate how much you learned in the course.



Options	Score	Count	Percentage
1-Very Low	1	1	5.6%
2	2	0	0.0%
3	3	1	5.6%
4	4	2	11.1%
5	5	2	11.1%
6-Very High	6	12	66.7%

Statistics	Value
Response Count	18
Mean	5.22
Median	6.00
Standard Deviation	1.40

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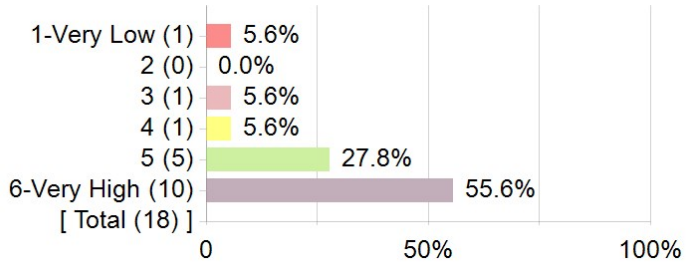
Rate the effectiveness of the course in challenging you intellectually.

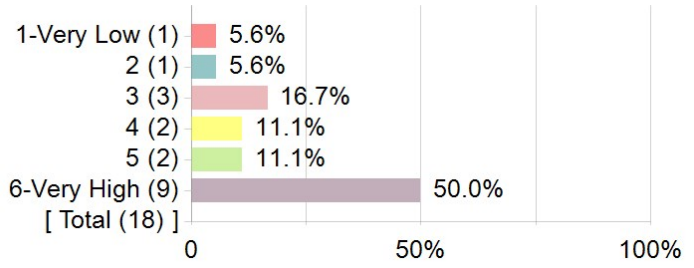
Rate the effectiveness of the course in challenging you intellectually.



Options	Score	Count	Percentage
1-Very Low	1	1	5.6%
2	2	0	0.0%
3	3	1	5.6%
4	4	1	5.6%
5	5	5	27.8%
6-Very High	6	10	55.6%
Statistics			Value
Response Count			18
Mean			5.17
Median			6.00
Standard Deviation			1.34

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

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



Options	Score	Count	Percentage
1-Very Low	1	1	5.6%
2	2	1	5.6%
3	3	3	16.7%
4	4	2	11.1%
5	5	2	11.1%
6-Very High	6	9	50.0%
Statistics			Value
Response Count			18
Mean			4.67
Median			5.50
Standard Deviation			1.64

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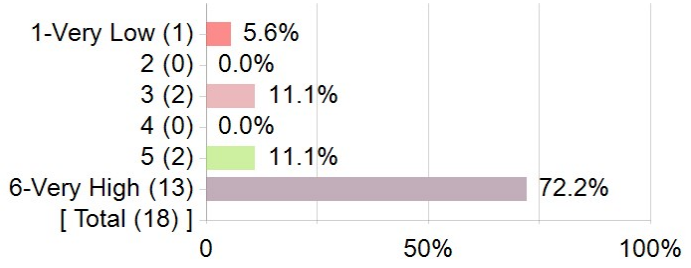
INSTRUCTOR QUESTIONS

Provide an overall rating of the instruction.

Provide an overall rating of the instruction.



Options	Score	Count	Percentage
1-Very Low	1	1	5.6%
2	2	0	0.0%
3	3	2	11.1%
4	4	0	0.0%
5	5	2	11.1%
6-Very High	6	13	72.2%

Statistics	Value
Response Count	18
Mean	5.28
Median	6.00
Standard Deviation	1.45

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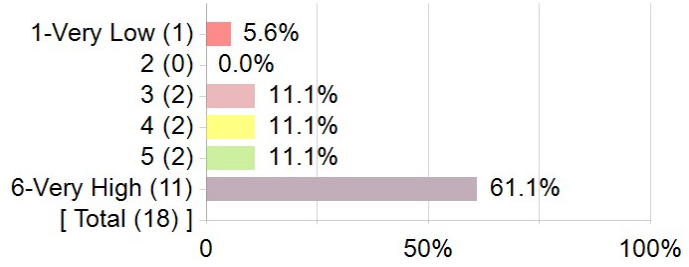
Rate the effectiveness of the instructor in stimulating your interest in the subject.

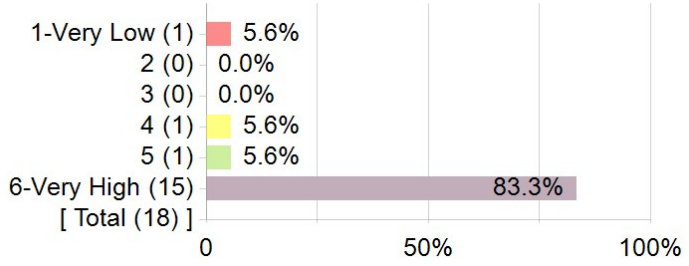
Rate the effectiveness of the instructor in stimulating your interest in the subject.



Options	Score	Count	Percentage
1-Very Low	1	1	5.6%
2	2	0	0.0%
3	3	2	11.1%
4	4	2	11.1%
5	5	2	11.1%
6-Very High	6	11	61.1%
Statistics			Value
Response Count			18
Mean			5.06
Median			6.00
Standard Deviation			1.47

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	1	5.6%
2	2	0	0.0%
3	3	0	0.0%
4	4	1	5.6%
5	5	1	5.6%
6-Very High	6	15	83.3%
Statistics			Value
Response Count			18
Mean			5.56
Median			6.00
Standard Deviation			1.25

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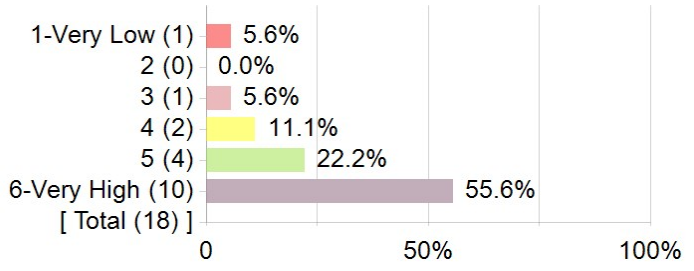
Rate the effectiveness with which the instructor communicated course content and ideas.

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

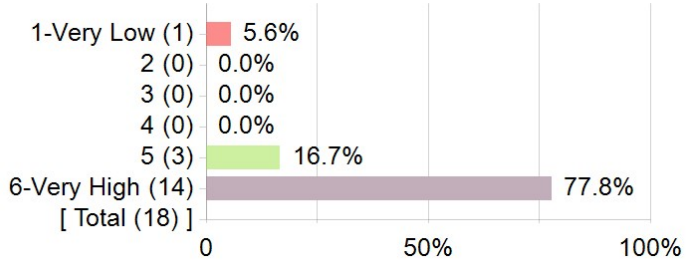


Options	Score	Count	Percentage
1-Very Low	1	1	5.6%
2	2	0	0.0%
3	3	1	5.6%
4	4	2	11.1%
5	5	4	22.2%
6-Very High	6	10	55.6%

Statistics	Value
Response Count	18
Mean	5.11
Median	6.00
Standard Deviation	1.37

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	1	5.6%
2	2	0	0.0%
3	3	0	0.0%
4	4	0	0.0%
5	5	3	16.7%
6-Very High	6	14	77.8%

Statistics	Value
Response Count	18
Mean	5.56
Median	6.00
Standard Deviation	1.20

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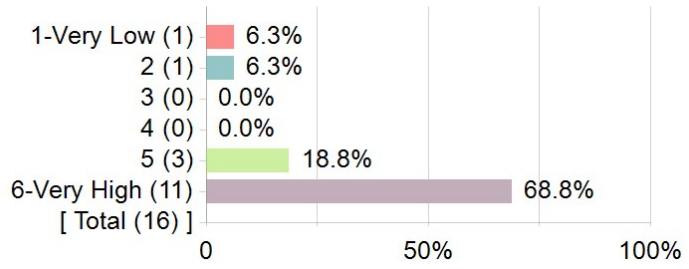
Rate the usefulness of OneNote.

Rate the usefulness of OneNote.

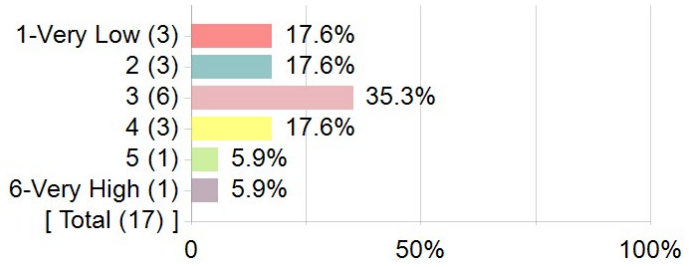


Options	Score	Count	Percentage
1-Very Low	1	1	6.3%
2	2	1	6.3%
3	3	0	0.0%
4	4	0	0.0%
5	5	3	18.8%
6-Very High	6	11	68.8%

Statistics	Value
Response Count	16
Mean	5.25
Median	6.00
Standard Deviation	1.53

Rate the usefulness of discussion sections.

Rate the usefulness of discussion sections.



Options	Score	Count	Percentage
1-Very Low	1	3	17.6%
2	2	3	17.6%
3	3	6	35.3%
4	4	3	17.6%
5	5	1	5.9%
6-Very High	6	1	5.9%

Statistics	Value
Response Count	17
Mean	2.94
Median	3.00
Standard Deviation	1.39

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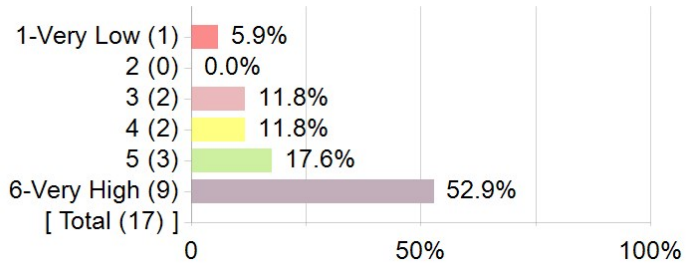
Rate the usefulness of office hours.

Rate the usefulness of office hours.



Options	Score	Count	Percentage
1-Very Low	1	1	5.9%
2	2	0	0.0%
3	3	2	11.8%
4	4	2	11.8%
5	5	3	17.6%
6-Very High	6	9	52.9%
Statistics			Value
Response Count			17
Mean			4.94
Median			6.00
Standard Deviation			1.48

OPEN-ENDED QUESTIONS

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

Comments
Yes. It forced me to evolve my mathematical skills at a rapid rate.
Not really. Since the professor only talked about concepts and never explain the concepts well.
The math I took in high school was nothing like the math taught in this course. That being said I liked thinking about math in a new and proof–based way.
Yes! It was amazing to my knowledge of math.
Yes, because the instructor presented new material in a way that was engaging. Although the course was difficult, there were many available resources for help.
The course has been so helpful for it provides a hefty amount of concepts in linear algebra, as well as how these concepts are interconnected.
Yes. The notes provided by the professor and the lecture really ingrained the ideas of linear algebra into my mind.
Yes. Provided me with a very strong and great foundational and conceptual understanding of linear algebra. Had a good balance of computations and concepts.
Yes, as I learned a new framework for analyzing sets of data (linear algebra) that abstracted into conceptual understanding.
Yes—while I had taken linear algebra in high school before, I felt that my instructor was able to explain the concepts more clearly and in depth, so that I have a better understanding of the subject.
The course helped me learn and understand applications of linear algebra. The most helpful thing, however, was definitely the textbook in grasping a strong understanding of the material. There is a lot to cover but it all builds off one another, so slowly over time, you gain a deeper understanding of topics.

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

Comments
I loved how it encouraged real problem solving.
I was initially interested in mathematical analysis, but after taking this course, I was never interested in math again, and I hope to avoid Apurva's courses in the future.
This course was challenging but still manageable. With enough time and using resources such as office hours, you can learn a lot from this course.
The professor (Apurva) is genuinely amazing. He takes the time to learn all of his students' names, gets to know them, and teaches us to the best way possible. He's honest, and takes us through the hard math with as much care as he can. I bombed the first midterm for not studying, and Apurva talked me through the possibilities and ultimately made me stay in the course. With the help from him, the homework (which is worth a lot, so it's good to always keep up with it), and past exams – that are available on the CANVAS page – I was able to nearly ace the exam. This course isn't an easy one, but if you like math and are willing to put in more effort, you'll love this course and get a good grade.
I had never taken linear algebra before this course, only having a basic knowledge of matrices from AP Physics in high school. Apurva did an amazing job of introducing the topics little by little to ensure that we knew all of the concepts, while still moving at a quick pace and teaching efficiently. He takes some of the most organized, easily understandable notes I have ever seen. He color codes and highlights them in a manner that is easy to follow, and he makes sure to underline and circle the things that we should memorize. He posts the class notes on Canvas so they are easy to go back to and study from. Apurva also is great at making himself available and gives thoughtful advice on how to tackle problems during office hours rather than just giving the solutions.
I really enjoyed this course. I learned a lot, and the workload (1 pset a week) is very reasonable.
The homework in the course made me feel challenged but gave me a good understanding of the concepts so that I could succeed on the exams.
MATH–290 really made me less afraid of mathematics. I viewed maths in my high school as inapproachable, but in MATH–290 I am able to stepwisely solve the seemingly complicated maths problems by combining simple steps.
Math 290 is not as hard as people make it out to be. If you actually invested, study, and occasionally go to office hours, you will be fine. Apurva is a phenomenal lecturer and a kind person. His lecture notes are goated...if you ever need to miss a lecture one day, everything will be on the notes. The only time you really need to grind is for the midterms and final (please start rigorously studying at least a week before the exam)
If you're planning on pursuing anything in stem AND are interested in math, I would highly recommend this course. There are weekly quizzes and homework assignments as well as 2 midterms & a final. The homework takes up a lot of time but it isn't really a burden if you enjoy solving math. Apurva is a great instructor, class notes are very easy to access and understand. If you don't enjoy math or don't plan on spending a lot of time on homework, you should rethink taking this class. It'll take you a couple of hours and a couple of office hours to complete each week.
Learned a lot in this class, content was super interesting, professor was very clear and was always open to questions.
I would not recommend taking this unless you are planning on majoring or minoring in something math–related. It is NOT an easy course by any means, but it certainly is an engaging course. The professors are great and are always open to answering questions during class, but the class is also pretty fast–paced and intellectually challenging. As someone who took this course without a real requirement to taking it, I wouldn't continue. The weekly homework assignments are very good at preparing you for the weekly quizzes and ultimately the midterms.
Great instructor, was talented at explaining things in a way that was easily understandable. Clearly has a passion for the beauty of math. Very chill as well. The class is great if you're interested in math, there's a good balance of computations and concepts. This course helped me get a good foundational and conceptual understanding of linear algebra.
The course is challenging but doable. Make sure to take the time to understand the homework and complete practice exams before tests. The policy of dropping the lowest grade homework and quiz are helpful.
This course was appropriately challenging. As its MENU–level, it moves fairly quickly, but Apurva is an excellent instructor. He explained the concepts and connections between them clearly, so I had a good big–picture and detailed understanding of linear algebra. There's not as many students in the class as other lectures, so during class Apurva had time to answer one–on–one questions and help individual students solve example problems. The grading in the class is strict–you need the correct answer and accurate explanation to gain full points. While this is a difficult course, with appropriate effort and interest in math, it's definitely not impossible to succeed in.
I liked the course, and the work is manageable if you put in the effort, but the tests are definitely hard. The material is definitely going to take time to understand but that is what the homework for. It's easy to get the homework done as long as you go to office hours and reference examples in the textbooks. The midterms were very challenging, and the quizzes in the discussion section were somewhat hard but not too bad. If you are interested in math, it's a worthwhile class to take.

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What are the primary teaching strengths of the instructor?

Comments
Very kind and understanding. Very flexible with deadlines if you have a suitable reason. Super helpful office hours.
He talks a lot about concepts and perhaps helps us learn more broadly about different concepts
Apurva always was very enthusiastic about the subjects he teaches. Additionally, he is always willing to make time to help a student.
He cares about his students and is very calm, and knowledgeable about the subject.
Apurva was very clear and to the point with everything he did. He was always very well–prepared for each class, yet he still made sure we had time for some class participation or practice problems.
Good explainer of concepts, and actually gets through the material in a timely manner (which isn't always the case).
He explained each topic thoroughly and consistently updated resources for students.
Apurva's really approachable outside of class, and he's always willing to answer my questions even if the questions are rather basic.
I enjoyed everything, to be honest
Clear, passionate
Was very good at communicating and connecting with students. Explained concepts and problems in a very clear way and was fun to discuss problems and other things during office hours.
Knows the content very well and can spot errors almost instantaneously. I also appreciate how he constructed a narrative from the concepts we covered, which helped with studying. Additionally, he used class time very well, saving enough to review relevant problems and concepts before midterm exams.
Clear communicator, organized, passionate about math, clearly cares for students I also liked how we did warm up problems and example problems in class—it helped me understand how to solve problems better.
Apurva loves the class and the material so it's very engaging to sit in class and listen to him teach. He also is really helpful in office hours, and his notes are super neat. He provides a lot of materials on canvas for you to use to study.

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

Comments
N/A
This professor never explain the concept clearly, and after attending the lecture and did the example questions, I still don't understand what the professor was talking about
I cannot think of any at the time.
Sometimes his writing and speech were somewhat difficult to understand.
Maybe sometimes he proceeds a little too fast, but I think it's up to me to keep up with his pace.
Not any to speak of.
Sometimes, he moves a bit fast in explanations when a student does not understand a problem solution.
Apurva tends to move really fast, and often he would put problems up on the board for you to do without teaching how to do. At times, I felt like he provides a really basic overview of a topic and then would throw much more difficult examples at us.

Can you offer suggestions for improvement?

Comments
N/A
Quizzes were not always entirely helpful and caused quite a bit of stress on top of homework and trying to stay up with the material.
Not really.
None at this time.
Do examples as a class, instead of mostly individually. There were times, when individually, I had no idea what to do.

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Suggest improvements to the class format.

Comments
N/A
Honestly, the class format allowed me to drastically improve my understanding of linear algebra as well as how to study math as a student. I would not change the format other than more explicitly stating which sections we are going over and when.
It’s very good
I think the class could be better if there was more time for students to collaborate during class on problems.
None, it gets the job done.
I don't have suggestions for improvements, but I liked doing warm–up problems and examples in class. It helped me understand how to solve problems better.
I thought the class format was very good. I liked having a discussion section where we could ask questions. Perhaps, more time to ask questions with the instructor in class.

Suggest improvements to the discussion section format.

Comments
N/A
The discussion section was not always entirely helpful and also caused quite a bit of stress. The quizzes could be unpredictable.
I wish there were no quizzes
I think that rather than just reviewing homework answers, if the TA could give out a sheet of optional practice problems every week, it would help the students who don't need help with the specific problem that the TA is going through keep themselves occupied.
The weekly quizzes helped study for midterms but were stressful because we had to gain a complete understanding on new material constantly.
Instead of quizzes during the discussion section, we should have worksheets with similar questions so that it becomes a little less stressful and help us prepare for the midterm. Grading on this should be based on completion and/or whether you get at least one question correct.
Quiz first so that students can leave if they do not want to stay for discussion
Besides quizzes, it was just students asking TA questions. Did not feel very useful, maybe could use some structure.
Maybe asking groups of students to present example problems to the class might make them more engaging. Not sure how enthusiastic students would be about such exercises, though.
While helpful to test my understanding of the content and become familiar with the structure of exam questions, I found the weekly quizzes a bit stressful. The weekly quizzes covered material from two weeks prior, but I would also be working on homework that included material from one week prior and trying to learn the current week's content. It may be more beneficial to have quiz questions as a worksheet that the TA could go through in class instead.
TA's didn't seem to know what we were learning in class. Sometimes, they would do problems with methods we had yet to learn.

Suggest improvements to the office hours format.

Comments
N/A
Office hours were really helpful and I really liked the format of them.
More office hours for Apurva :))
I recommend perhaps doing a brief overview of the topics learned at the beginning of office hours, or going into office hours with certain questions from the homework that the instructor thought were hard and wanted to do together.

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