

## Individual Report for for MATH\_220-0\_61: Differential Calc One-Variable (Rachael Norton)

### Course and Teacher Evaluations CTEC Fall 2017

Project Audience 30

Responses Received 29

Response Ratio 96.7%

#### Report Comments

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**Creation Date** Fri, Jan 05, 2018

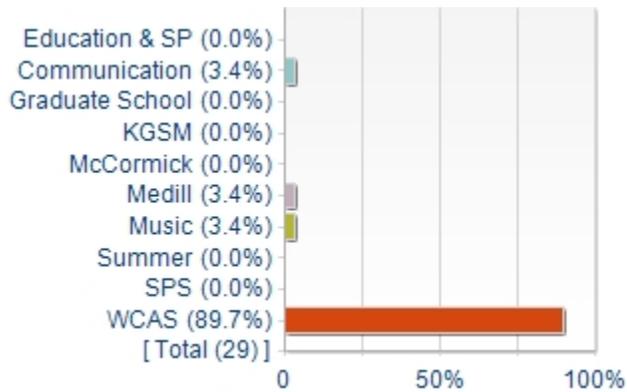
## Northwestern University

### Course Evaluations

Instructor	Course
Rachael Norton	MATH_220-0_61: Differential Calc One-Variable

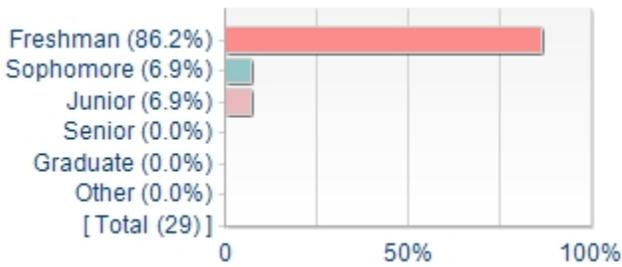
### DEMOGRAPHICS

#### Your School



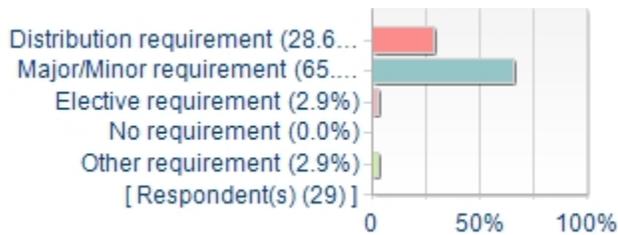
Options	Count	Percentage
Education & SP	0	0.0%
Communication	1	3.4%
Graduate School	0	0.0%
KGSM	0	0.0%
McCormick	0	0.0%
Medill	1	3.4%
Music	1	3.4%
Summer	0	0.0%
SPS	0	0.0%
WCAS	26	89.7%

### Your Class



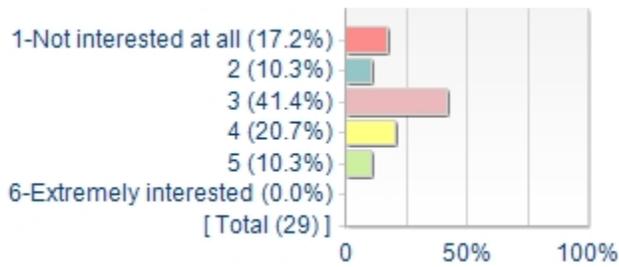
Options	Count	Percentage
Freshman	25	86.2%
Sophomore	2	6.9%
Junior	2	6.9%
Senior	0	0.0%
Graduate	0	0.0%
Other	0	0.0%

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



Options	Count	Percentage
Distribution requirement	10	28.6%
Major/Minor requirement	23	65.7%
Elective requirement	1	2.9%
No requirement	0	0.0%
Other requirement	1	2.9%
<b>Respondent(s)</b>	<b>29</b>	

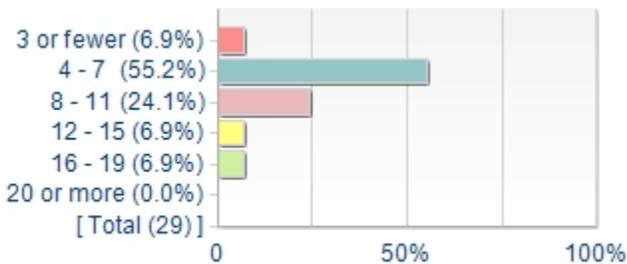
### What was your Interest in this subject before taking the course?



Options	Count	Percentage
1-Not interested at all	5	17.2%
2	3	10.3%
3	12	41.4%
4	6	20.7%
5	3	10.3%
6-Extremely interested	0	0.0%

### TIME-SURVEY QUESTION

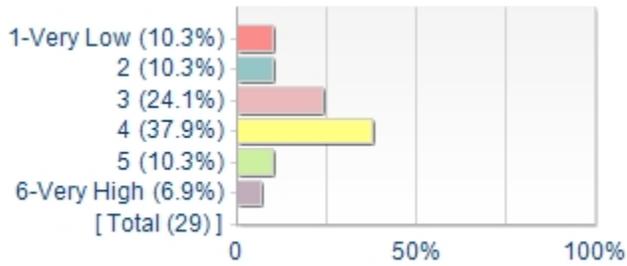
Estimate the average number of hours per week you spent on this course outside of class and lab time.



Options	Count	Percentage
3 or fewer	2	6.9%
4 - 7	16	55.2%
8 - 11	7	24.1%
12 - 15	2	6.9%
16 - 19	2	6.9%
20 or more	0	0.0%

## COURSE QUESTIONS

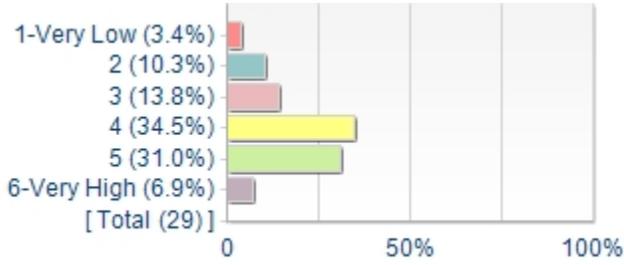
Provide an overall rating of the course.



Options	Score	Count	Percentage
1-Very Low	1	3	10.3%
2	2	3	10.3%
3	3	7	24.1%
4	4	11	37.9%
5	5	3	10.3%
6-Very High	6	2	6.9%

Statistics	Value
Response Count	29
Mean	3.48
Median	4.00
Standard Deviation	1.33

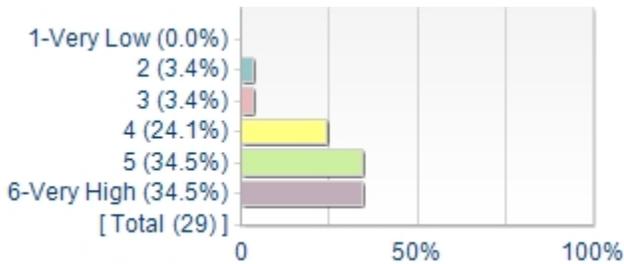
**Estimate how much you learned in the course.**



Options	Score	Count	Percentage
1-Very Low	1	1	3.4%
2	2	3	10.3%
3	3	4	13.8%
4	4	10	34.5%
5	5	9	31.0%
6-Very High	6	2	6.9%

Statistics	Value
Response Count	29
Mean	4.00
Median	4.00
Standard Deviation	1.22

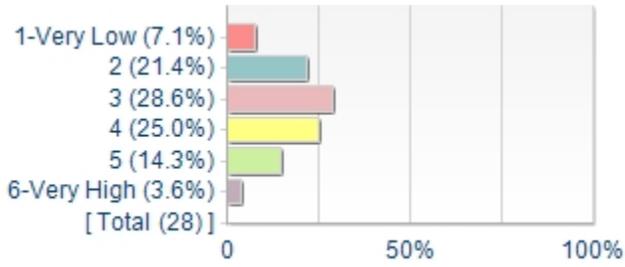
**Rate the effectiveness of the course in challenging you intellectually.**



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	1	3.4%
3	3	1	3.4%
4	4	7	24.1%
5	5	10	34.5%
6-Very High	6	10	34.5%

Statistics	Value
Response Count	29
Mean	4.93
Median	5.00
Standard Deviation	1.03

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

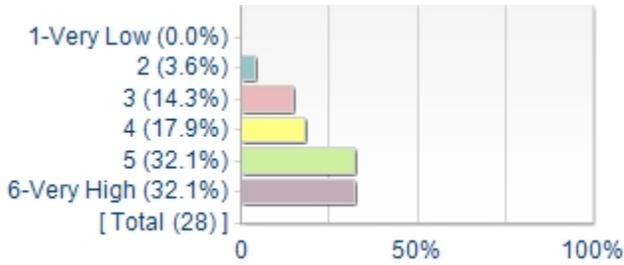


Options	Score	Count	Percentage
1-Very Low	1	2	7.1%
2	2	6	21.4%
3	3	8	28.6%
4	4	7	25.0%
5	5	4	14.3%
6-Very High	6	1	3.6%

Statistics	Value
Response Count	28
Mean	3.29
Median	3.00
Standard Deviation	1.27

**INSTRUCTOR QUESTIONS**

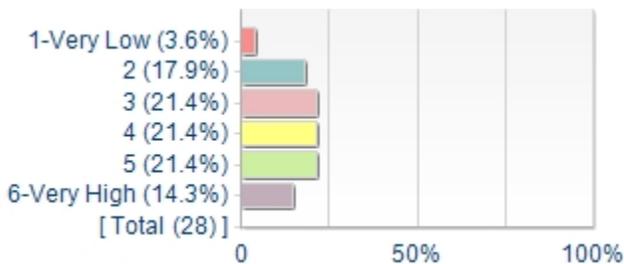
**Provide an overall rating of the instruction.**



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	1	3.6%
3	3	4	14.3%
4	4	5	17.9%
5	5	9	32.1%
6-Very High	6	9	32.1%

Statistics	Value
Response Count	28
Mean	4.75
Median	5.00
Standard Deviation	1.17

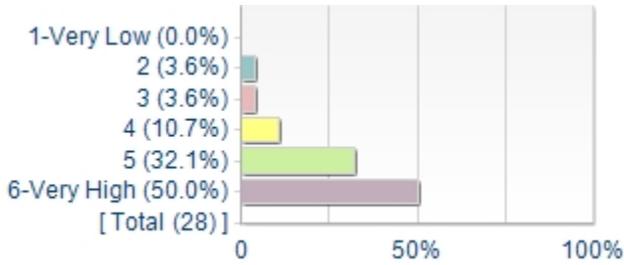
**Rate the effectiveness of the instructor in stimulating your interest in the subject.**



Options	Score	Count	Percentage
1-Very Low	1	1	3.6%
2	2	5	17.9%
3	3	6	21.4%
4	4	6	21.4%
5	5	6	21.4%
6-Very High	6	4	14.3%

Statistics	Value
Response Count	28
Mean	3.82
Median	4.00
Standard Deviation	1.44

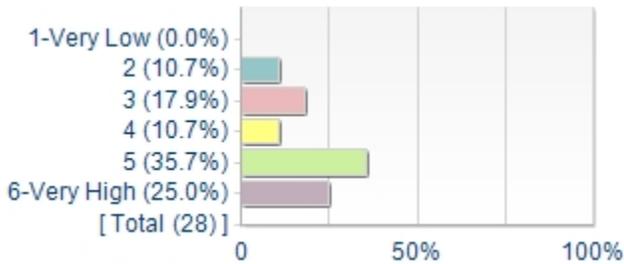
**Rate how well prepared the instructor was for the class.**



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	1	3.6%
3	3	1	3.6%
4	4	3	10.7%
5	5	9	32.1%
6-Very High	6	14	50.0%

Statistics	Value
Response Count	28
Mean	5.21
Median	5.50
Standard Deviation	1.03

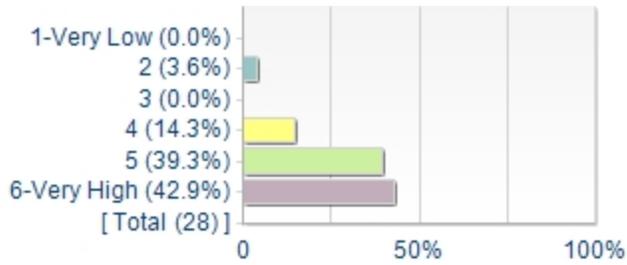
**Rate the effectiveness with which the instructor communicated course content and ideas.**



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	3	10.7%
3	3	5	17.9%
4	4	3	10.7%
5	5	10	35.7%
6-Very High	6	7	25.0%

Statistics	Value
Response Count	28
Mean	4.46
Median	5.00
Standard Deviation	1.35

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



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	1	3.6%
3	3	0	0.0%
4	4	4	14.3%
5	5	11	39.3%
6-Very High	6	12	42.9%

Statistics	Value
Response Count	28
Mean	5.18
Median	5.00
Standard Deviation	0.94

**OPEN-ENDED QUESTIONS**

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

Comments
I took BC Calculus in high school but did not perform well on the AP, so I had to take this class. It was mostly review from high school.
yes, on my own.
yes, this course reviewed material previously learned in high school and expanded off of that which was very helpful.
The lectures were helpful but not the discussions.
Yes. It was challenging and had many homework's to force me to stay on track with course material.
I really liked the structure of lecture. That's where I learned the most. However, discussion was completely a waste of time, especially because the worksheet answers were not given and did not match the questions on the exam. WebAssign was also not at all helpful in exam prep. The most effective means of learning and studying was reviewing lecture notes and taking the provided practice exams.
Course was not good. Hw did not relate to the tests whatsoever. However, Professor Norton was fantastic.
yes, office hours are absolutely necessary though.
The course helped me learn because we covered a lot of material.
NO. There was not an efficient feedback system in the homework, (if you got something wrong it would not tell you how to fix it, unlike in Sapling Learning where it goes to great detail on how to fix it), the class was confusing, and to top it off the TA was not helpful.
Yes it taught me to problem solve better.
Yes, the professor takes an appropriate amount of time to go through new concepts.
This course helped me learn but it would have been much more helpful if more practice materials were provided
No I unlearned
This course helped me learn because Professor Norton is incredible.
The online homework was good practice for exams, because the concepts were covered on a much simpler level in class.
It helped me learn a little but the course went so fast that it was hard
This course added to my knowledge of calculus from previous classes.
Everything taught in this class I had already learned in high school. While I did learn some new applications of the material or learn to better understand the material, most of that was on my own time as only the basics were ever really taught in class (which is not what would show up on the tests).
This course made me learn by basically having me teach myself everything. the instructors only give you the bones of what you might have to know for the exam, and you have to take that and really learn how to actually do the extremely complicated homework assignments and exam questions, even when you're only given the basics to begin with
Yes

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

Comments
Math 220 is all material that is covered in high school, so it is expected to be easy. However, the exams are much harder than everything else in the class, so preparing for them is very difficult. Either the exams need to be easier or the practice problems need to more accurately reflect what will be on the tests.
If you want to be successful understanding the homework and classwork is not enough. It is all based off of the three tests which are much harder than the class or the homework.
Very fast passed course, never used book in class but would recommend studying out of the textbook, web-assign counts for more than you think, learned the 2nd midterm is much harder then the first.
Though the lectures only presented the simplest information they were fairly helpful. The discussion sections, however, did not help at all. My TA was pretty rude and the worksheets were very complicated and not related to the information in

### Comments

the lectures. The tests were extremely hard as well. The average grade on the second midterm was just over 50 percent.

This class was organized and straightforward. However the exams were always MUCH more difficult than any material given during class or for homework.

The most beneficial parts of this course were lecture and practice exam review. Discussion and Webassign were not helpful at all and did not match the type of questions presented on exams.

The tests had nothing to do with any of the practice tests. They did not even gage how someone's understanding of a given subject.

Having taken AP calc AB in highschool, this class is super hard. You NEED to go to office hours to be successful in this class. Tests are crazy hard, but you can do really really well if you work real hard. Spend full days in the library redoing all your webassign questions, bring the ones your confused about to your teacher's office hours; then you might get an a

Concepts in class were explained well, but the some concepts on the exams and some homework problems were not explained in class. Lots of studying is required for the exams.

This class was terrible in that the course material did not match up with examination material and so everyone did horrendously. All of the homework (of which there is a ton) focused on certain topics that were unhelpful for tests. This class blew. Plain and simple.

They were taught well.

Professor is good at explaining new concepts. Tests are harder than the class. If you understand the homework and discussions, you'll do well in the end.

Course assessments and homework assignments are much harder than what we go over in class. Rachael is really nice, but sometimes, she oversimplifies the material, and other times, she overcomplicates it. Exams are way harder than the useless practice exams and homework and the class notes, and no amount of intensive preparation can adequately prepare you for them. Discussion sections and worksheets are completely worthless and a waste of time.

This course was manageable but would be overwhelming without any background knowledge of the material

It's a difficult class even with prior knowledge. Homeworks aren't that hard. Discussion sections are extremely pointless and were a waste of an hour

I felt that the course was well paced and that I learned a lot of math. The midterms were incredibly difficult no matter how much studying I did.

The exams were very difficult, because much of the practice did not reflect the difficulty of the exam questions.

This course was hard especially if you only have semester of calculus in your background

I love this class, it keeps you grounded and really makes sure you are consistently practicing material while helping you polish up your basic calc skills.

This course focused on the initial material of calculus, corresponding to Calculus AB in high school. The materials covered were not extremely difficult, and the teaching of these materials was straightforward. However, the two midterms and final were made extremely difficult. While online homework is a significant portion of the grade, and one midterm can be dropped (placing more weight on other midterm and final), the exams in this course were made very difficult.

This class is very hard!!!1

The course isn't terrible but the WebAssign is. However, if you pay attention in class and do the WebAssign, the tests aren't too bad, just be prepared for questions that are harder than the ones you go over in class.

The course is difficult because of the lack of explanations in class. They teach you the minimum amount of stuff you would have to know for the exam and make the exams themselves extremely hard, even when that is not necessary because the course in itself is already hard.

## What are the primary teaching strengths of the instructor?

Comments
Compared to teachers I had in the past, Professor Norton did a much better job explaining what the different theorems and equations really meant rather than just using math jargon.
enthusiasm
uses many examples to demonstrate the concepts
Explains everything clearly on the board.
Prepared, helpful, very open to questions and helping outside of class.
Professor Norton was great! She did a great job of presenting the information in a clear manner and checking to make sure we are understanding the material. The fact the she cold calls motivated me to do the reading before class and keep up with the material, which (let's be honest), I most likely would not have otherwise done. She was great!!!
She was amazing, I hope that she will have a very long career at Northwestern and one day lead the math department.
Office hours
Professor Norton explained all of her work very thoroughly and she gave handouts that explained concepts which was very helpful.
Interacting with the students and actually being positive about teaching math.
She was able to answer every question with an example and was easy to understand.
Explaining concepts
Nice and knowledgeable.
She challenged her students to participate in class
Professor Norton is amazing! She explains difficult math concepts clearly and always takes questions. She personalized her office hours based on our availability. She is nice and approachable and is a great math professor. I would definitely take another math class from Professor Norton.
She was able to simplify concepts so that we understood them at a base level. Also, she was enthusiastic about teaching the class.
She knows a lot about her subject and is very enthusiastic about it
Straightforward and easy to understand, helpful outside of class
Professor Norton taught the material well and had enthusiasm for the class. She also stimulated a nice, welcoming and fun class environment for the students. The worksheets she made were also very helpful
Ms. Norton is good at trying to get every single person to answer questions

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

Comments
The in-class material is too easy compared to the exam, so you feel prepared when you're really not.
doesn't really explain the examples, just kind of does them on the chalk board and we learn by watching.
none
Relat
None!
She should have written the tests
Sometimes it can get a bit boring and hard to pay attention
We didn't do many problems that were of the same difficulty as the exams.
Effectively entombing the concepts into our minds.
none
The class examples are easier than the test
Doesn't answer questions clearly and oversimplifies material a lot.
She goes through some concepts too quickly and expects students to understand immediately
None.
It went really fast
While she taught the material well, I think that Professor Norton did not go into enough detail sometimes or left the problems too simple. She also had a tendency to run over the end of class which was problematic for someone who had to get from Parkes Hall to Tech in 10 minutes if she didn't run over.
Ms. Norton writes very fast on the board and it is hard to keep up with what she's saying and writing while you are trying to write down what she's writing at the same time. Slowing down the pace would have helped a lot

## Can you offer suggestions for improvement?

Comments
Exams are too hard when compared to practice problems. All available practices are
Explain the examples in class more
Harder examples in class would be helpful.
I really really disliked the discussion and the worksheets. They truly were a waste of time. If those were eliminated, this course would be significantly more effective.
She needs to write the test, or send out study guides.
Offer extra practice problems that are representative of text questions. Post solutions to those online!
Doing harder in class practice problems would be beneficial.
Cooperate more with the other instructors so that everyone teaches the same way and make the exams the way they used to be, instead of the bullcrap theoretical stuff you all changed it into this quarter.
Be more confident teaching.
Harder class examples
Slow down when explaining and generate tests that are simpler and a closer reflection of level of difficulty presented in notes.
Maybe go over some concepts more slowly
No.
Slow down and explain the material better
Providing practice problems and discussions that match the difficulty of the exams
Make sure you move through the material fast enough so that it's all covered in class without running over and also try and provide some more difficult questions that line up better with the midterms and final so some experience with them can be had beforehand.
Just slowing down the pace of the class and making sure everyone understands, not just a select few

**What in-class activity (with instructor Rachael Norton) was most beneficial to your learning: group activity with piece-wise functions on the first day, limit laws worksheet, Desmos activity in the library, differentiation formulas worksheet, chain rule in pairs activity, proving inverse trig function derivatives in groups, derivative tests worksheet, working in groups on related rates problems/optimization problems/curve sketching, etc? Why?**

Comments
Doing group worksheets was helpful because it allowed us to hear the material from other students which may allow us to understand it better
activity in the library
Desmos activity in the library. This activity was hands on and let me visualize what was going on which was extremely helpful
derivative tests worksheet
Related rates
The most effective was the derivative test worksheet was my favorite because my group and I had to figure out what first and second derivatives told us. This was memorable because I remember working it out and figuring it out on my own. This is more beneficial than the information being handed to me.
demos in library
proving inverse trig derivatives
All of the handout worksheets were very helpful because there provided an organized format for dense information.
Probably optimization just because it was the most effectively taught part.
The curve sketching in groups because I probably would not do it on my own.
working with groups on related rates - good to hear lots of perspectives on how to solve problems
All worksheets were good to have to study with. Group work was good to fill missing gaps one may have missed from the lecture.
Honestly, I didn't find any of them particularly useful. I just prefer notes on the board.
Working in groups on related rates problems and optimization problems
Working in groups were my favorite because I could see how other people were doing the problem and used it to help me
These were all helpful. Any time I was able to collaborate with other students and work out difficult concepts together increased my mathematical understanding.
Worksheets- help for studying
Group activities
Group work on related rates and optimization helped me understand some of the more difficult concepts of the course.
Working in groups on related rates problems/optimization problems, curve sketching was helpful because you got to see how others did the problems and see where you were doing things wrong since you had an extra set (or extra sets) of eyes.
chain rule pairs just because that's the only one that really helped me learn personally

**What in-class activity (with instructor Rachael Norton) was least beneficial to your learning: group activity with piece-wise functions on the first day, limit laws worksheet, Desmos activity in the library, differentiation formulas worksheet, chain rule in pairs activity, proving inverse trig function derivatives in groups, derivative tests worksheet, working in groups on related rates problems/optimization problems/curve sketching, etc? Why? What could Rachael do differently to make that concept clearer?**

Comments
Desmos in the library was not helpful because we could not see the graph being drawn. It just magically appeared on the screen, so we had to visualize the changes in our head rather than explicitly seeing them happen when we changed values
group activities
working in groups on optimization problems, curve sketching. This is because no one in my group really knew what was going on with the material.
Desmos activity in the library
Proving inverse trig
Optimization worksheets was the least beneficial, just because we didn't really have to get through enough/go over the solutions to be beneficial.
formulas ws
the library one
The Desmos activity was least beneficial because I feel like that could have been done on paper/in class.
The library thing. I was confused most of that time.
The desmos library lab. It could have been taught in class quicker.
desmos activity made no sense
Desmos in the library
See above.
group activity with piecewise functions
Derivative test worksheet
All helpful
Discussion worksheets
While the limit laws and differentiation worksheets were helpful, they could be made more difficult for exam preparation.
The Desmos activity just because it was very confusing and hard to follow so I didn't learn or understand much.
related rates/optimization because there were only like 2 problems about those that we were able to complete in class so it didn't help for the homework that much

## What was the most memorable part of the lecture and/or office hours (with instructor Rachael Norton)?

Comments
The fact that Professor Norton knew everyone's name by week 2 was very impressive and memorable
The professors willingness to go step by step on the white board in her office for any question we had.
The reviews on exam day were very helpful.
First day and meeting her and realizing she was the best.
just the overall effectiveness of office hours
The group activities that made the class comfortable learning together.
Idk maybe just the overall fact that she seemed more interested in the students' wellness than the other teachers.
She is fun to have a conversation with outside of math.
Group work
Class notes on the board are best.
Working with other students on problems
Rachel was very helpful in office hours
Working with many unique individuals.
The banter from class.
friends I made

## Individual Report for for MATH\_220-0\_71: Differential Calc One-Variable (Rachael Norton)

### Course and Teacher Evaluations CTEC Fall 2017

Project Audience 32

Responses Received 23

Response Ratio 71.9%

#### Report Comments

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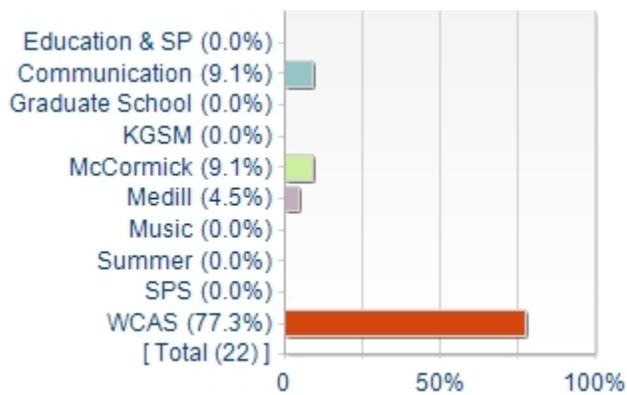
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Instructor	Course
Rachael Norton	MATH_220-0_71: Differential Calc One-Variable

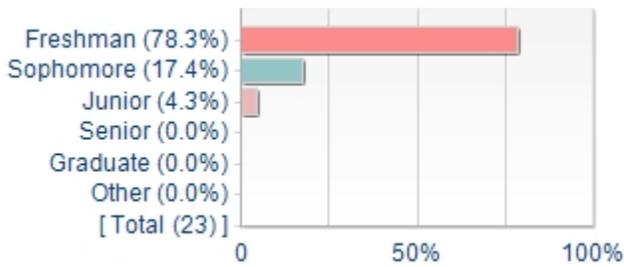
### DEMOGRAPHICS

#### Your School



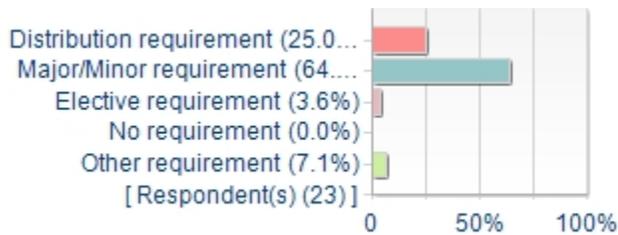
Options	Count	Percentage
Education & SP	0	0.0%
Communication	2	9.1%
Graduate School	0	0.0%
KGSM	0	0.0%
McCormick	2	9.1%
Medill	1	4.5%
Music	0	0.0%
Summer	0	0.0%
SPS	0	0.0%
WCAS	17	77.3%

### Your Class



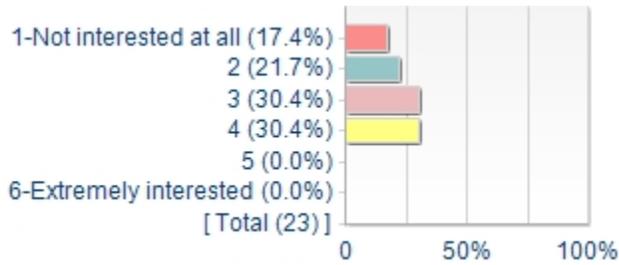
Options	Count	Percentage
Freshman	18	78.3%
Sophomore	4	17.4%
Junior	1	4.3%
Senior	0	0.0%
Graduate	0	0.0%
Other	0	0.0%

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



Options	Count	Percentage
Distribution requirement	7	25.0%
Major/Minor requirement	18	64.3%
Elective requirement	1	3.6%
No requirement	0	0.0%
Other requirement	2	7.1%
<b>Respondent(s)</b>	<b>23</b>	

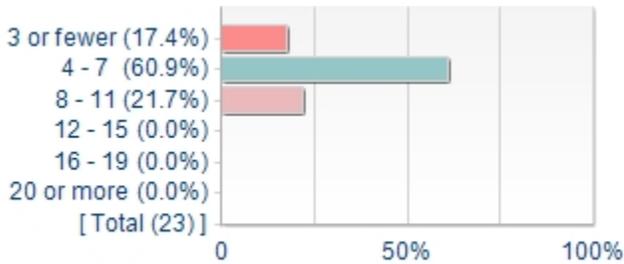
### What was your Interest in this subject before taking the course?



Options	Count	Percentage
1-Not interested at all	4	17.4%
2	5	21.7%
3	7	30.4%
4	7	30.4%
5	0	0.0%
6-Extremely interested	0	0.0%

### TIME-SURVEY QUESTION

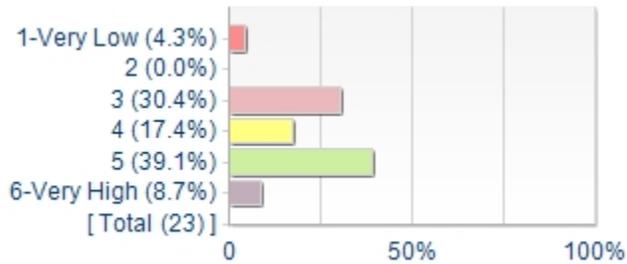
Estimate the average number of hours per week you spent on this course outside of class and lab time.



Options	Count	Percentage
3 or fewer	4	17.4%
4 - 7	14	60.9%
8 - 11	5	21.7%
12 - 15	0	0.0%
16 - 19	0	0.0%
20 or more	0	0.0%

## COURSE QUESTIONS

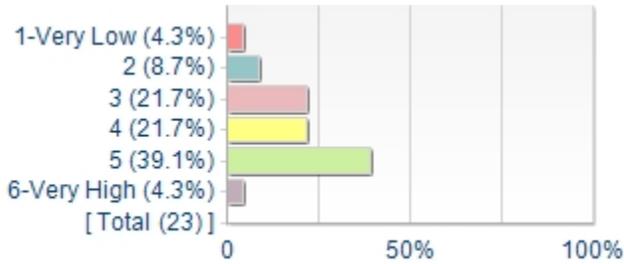
Provide an overall rating of the course.



Options	Score	Count	Percentage
1-Very Low	1	1	4.3%
2	2	0	0.0%
3	3	7	30.4%
4	4	4	17.4%
5	5	9	39.1%
6-Very High	6	2	8.7%

Statistics	Value
Response Count	23
Mean	4.13
Median	4.00
Standard Deviation	1.22

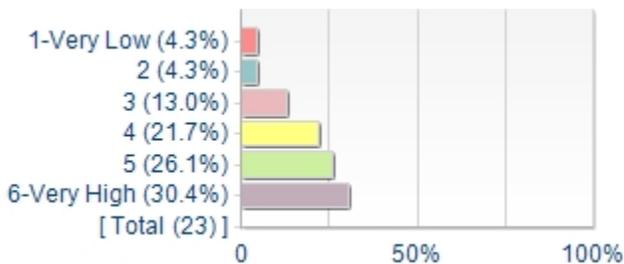
**Estimate how much you learned in the course.**



Options	Score	Count	Percentage
1-Very Low	1	1	4.3%
2	2	2	8.7%
3	3	5	21.7%
4	4	5	21.7%
5	5	9	39.1%
6-Very High	6	1	4.3%

Statistics	Value
Response Count	23
Mean	3.96
Median	4.00
Standard Deviation	1.26

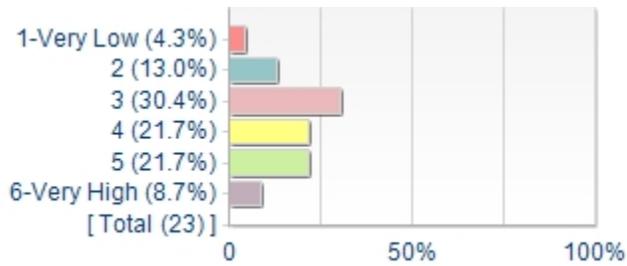
**Rate the effectiveness of the course in challenging you intellectually.**



Options	Score	Count	Percentage
1-Very Low	1	1	4.3%
2	2	1	4.3%
3	3	3	13.0%
4	4	5	21.7%
5	5	6	26.1%
6-Very High	6	7	30.4%

Statistics	Value
Response Count	23
Mean	4.52
Median	5.00
Standard Deviation	1.41

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

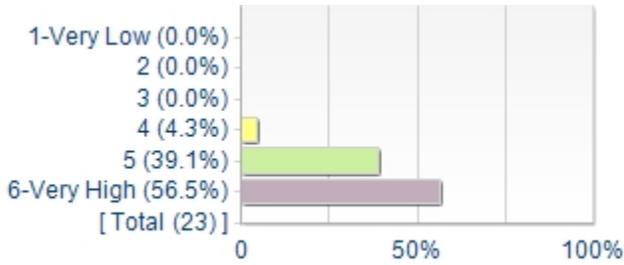


Options	Score	Count	Percentage
1-Very Low	1	1	4.3%
2	2	3	13.0%
3	3	7	30.4%
4	4	5	21.7%
5	5	5	21.7%
6-Very High	6	2	8.7%

Statistics	Value
Response Count	23
Mean	3.70
Median	4.00
Standard Deviation	1.33

**INSTRUCTOR QUESTIONS**

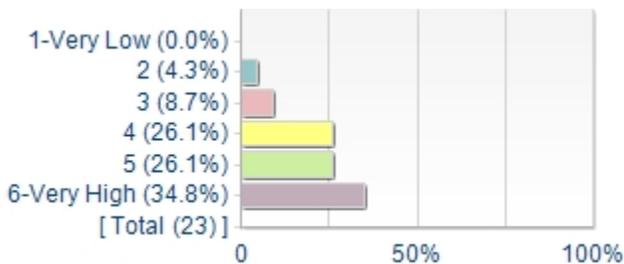
**Provide an overall rating of the instruction.**



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	0	0.0%
3	3	0	0.0%
4	4	1	4.3%
5	5	9	39.1%
6-Very High	6	13	56.5%

Statistics	Value
Response Count	23
Mean	5.52
Median	6.00
Standard Deviation	0.59

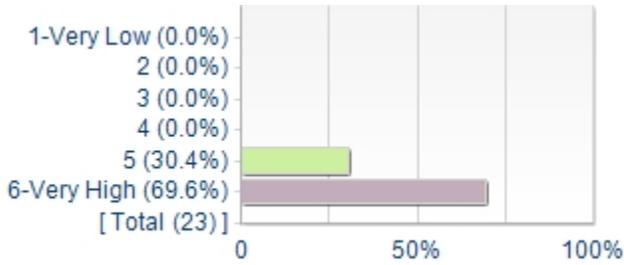
**Rate the effectiveness of the instructor in stimulating your interest in the subject.**



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	1	4.3%
3	3	2	8.7%
4	4	6	26.1%
5	5	6	26.1%
6-Very High	6	8	34.8%

Statistics	Value
Response Count	23
Mean	4.78
Median	5.00
Standard Deviation	1.17

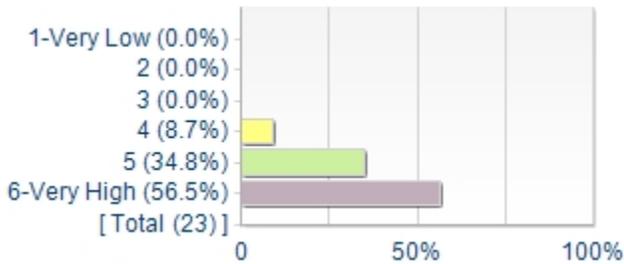
**Rate how well prepared the instructor was for the class.**



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	0	0.0%
3	3	0	0.0%
4	4	0	0.0%
5	5	7	30.4%
6-Very High	6	16	69.6%

Statistics	Value
Response Count	23
Mean	5.70
Median	6.00
Standard Deviation	0.47

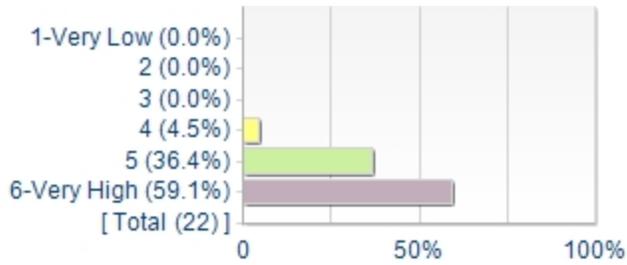
**Rate the effectiveness with which the instructor communicated course content and ideas.**



Options	Score	Count	Percentage
1-Very Low	1	0	0.0%
2	2	0	0.0%
3	3	0	0.0%
4	4	2	8.7%
5	5	8	34.8%
6-Very High	6	13	56.5%

Statistics	Value
Response Count	23
Mean	5.48
Median	6.00
Standard Deviation	0.67

**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	1	4.5%
5	5	8	36.4%
6-Very High	6	13	59.1%

Statistics	Value
Response Count	22
Mean	5.55
Median	6.00
Standard Deviation	0.60

**OPEN-ENDED QUESTIONS**

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

Comments
Not really, it is very accelerated and quick which means it was hard to keep up at times.
Why do the discussion section worksheets have barely anything to do with what's on the exams?
I think I did learn a lot but I still don't feel that I could complete some of the exam problems on my own.
I took AB in high school so it was all review.
Yes I learned a lot the interaction was great.
Yes because my teacher was amazing at lecturing and making sure the students understood what she was talking about.
I had already taken Calc 1 in high school previous to this class. It was a good refresher on the material that I had learned earlier in my academic career. I did not learn any new material, but the class was effective in giving me a good review of the curriculum.
This course helped me learn the concepts that were taught. The combination of difficulty levels in the problems in class, the WebAssign homeworks, and the discussion worksheets were good to keep the problems mixed.
yes, was very challenging has someone who had not taken calc in high school but effective in teaching basic calculus topics
Yes it did, the course threw a lot at you
I would say overall that this class helped me solidify concepts that I was already familiar with while introducing a few new concepts such as L'Hopitals rule and Newton's method.
No. This course is a repeat of high school calculus. Don't take this class if you took AP Calc in high school and did well.
I definitely improved my understanding of calculus.
Prof was good but section was awful.
I learned a lot, but actually applying the knowledge on exams was very difficult.
Yes. It was paced very well and the material followed a good order.
Yes. It gave me a general conceptualization of the basics of calculus.
I had learned essentially the same math material in high school senior year so this course was more of a refresher course than anything.
This course did indeed help me learn but I felt that there was more material to master than what I could master at a reasonable time.

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

Comments
It's a tough course if you did not take either AB or BS in high school. I took regular calc in high school and while all the material was somewhat familiar, it was hard to keep up
The exams were just nuts. I did not feel that the problems done in class or on the homework were indicative of the level of difficulty that was expected of me.
I liked the lectures but hated the discussion sections.
This is not a fun class but if you have to take it, take it with Professor Norton. Her lecture style is interactive and topics were taught very well. This course is extremely difficult if you have not taken calculus in high school, but manageable with calc background.
The course overall was easy. What was difficult were the midterms and final exam. I am thankful for my professor (Rachel Norton) because she prepared us very well for the difficulty of the exams.
The course was not super challenging intellectually, but I believe that's because I learned the material before. Class attendance is not super necessary, but you should go to review sessions before midterms and exams. Practice exams are the best preparation for tests. The homework is also necessary.

### Comments

I think this course taught me everything that it should have.

regular homework that is manageable, very difficult exams

This course goes by very fast. Norton is a great teacher, but the content can be hard to understand in one day

The instructor, Professor Norton, was amazing when it came to explaining and demonstrating concepts (which are important to know because the exams are mostly conceptual). The downfall came in discussion where we were asked to work on worksheets that had almost no relevance to what we were learning and were geared in such a way that it seemed like they wanted us to flail around for 50 minutes not knowing what to do while the TA just stood there and sipped her coffee. Then, we were supposed to take these worksheets to office hours to get any sort of instruction instead of just learning the material in class.

This material in this class was easy and the homework was not a whole lot of work. The midterms seemed like they were purposely trying to trick us, probably because they were. There's no point in designing a midterm so that the average is 50 percent just to give the class an outrageous curve at the end. Test us on problems that you expect us to actually be able to do, maybe harder than the homework problems but not unfair. The first midterm, especially, was unfair because it required a lot of advanced algebra and trig skills that we never went over in class and have nothing to do with testing our calculus skills.

Not too difficult of a course. If you actually take the time to complete and understand the Webassign the material is pretty manageable. The exams were pretty difficult and the grading on them is questionable, but the actual in-class aspect was enjoyable.

Exams were unnecessarily difficult

The course was very difficult.

I enjoyed my class a lot. We did great balance of her teaching as well as doing practice problems so the class flowed so nicely. You got to learn and then immediately practice after – perfect classroom format.

The aspects that were most important to me were the midterms and final exam. They are weighted more than the other aspects of the class and it does serve well to study a decent amount for them, especially the second exam since it is a bit harder than the first.

Rachel Norton was definitely an incredible professor who taught the material really clearly and with enthusiasm. The material itself is definitely doable and not too difficult, but can often challenge you a bit. Tests were on the harder side but with the curve not too bad. Lot of homework, but the homework was on the easier side for sure.

My instructor for this course was wonderful, and I felt challenged and like was learning throughout it. The course made me very interested in math despite how awful I am at it. However for me, this course was unreasonably difficult or at least for the amount of time I could offer to it, very unreasonable and it cut into much of my time for my other classes, making me drop one of them, yet I still did poorly. My coordinator's response to my difficulties was that I needed to do more calculus which certainly is not wrong, but if I was already offering as much time as I was then surely there is something missing in the manor of teaching. We went over problems and subjects and learned their foundations, but each exam was meant to challenge our depth of knowledge to each subject. Having done terribly on multiple exams and trying different solutions and wondering how this course could prepare me better, I finally realized that it would be far more beneficial to every student if after going over subjects, we could in discussion section learn HOW to tackle problems- it's supposed to be implicit, but surely there are tools, and tricks, and relations between items in any given problem that can be used to solve them, and if we all had had a stronger grounding in that I'm sure we would have all done much better. But the response was often that that comes with practice (but I did learn later that there are tricks for breaking down problems that can be put into words, and that there is a logical process that can be taught, and it was implicitly, but again, it would have helped me greatly- aside from my grade- in my deepening my understanding of math and reasoning if it were made explicit).

Given that this class is supposed to be hard, its still ridiculous that none of the material learned is really on the midterms.

## What are the primary teaching strengths of the instructor?

Comments
Allowing students to interact with each other and solve problems
Prof. Norton was prepared for class with very detailed notes that helped the class go smoothly.
She's a great teacher.
Good at explaining topics and having interactive lectures. Clearly wants all students to do their best. Very available for help outside of lecture.
Very good at conveying informations and explaining new topics. She always took the time to answer questions thoroughly.
Personable, relatively relaxed. Very nice and engaging person; obviously cares a lot about teaching the subject.
Rachael is really receptive to the small classes and noticed if people didn't seem to understand the topics we were learning. She was also good at explaining topics that people found challenging.
enthusiasm, clear explanation and willingness to explain again if misunderstanding persists
Everything
Being able to demonstrate concepts in more than one way to make sure that everyone understands the material.
Dr. Norton is really good at explaining math in a way that is simple and makes sense. She is eager to answer questions and make sure that each student is learning. She pretty much begs us to come to office hours every day during class, so she's extremely eager to give us extra help if we need it.
Love her. Really cared about the students learning and I felt like she wanted everyone to do well.
Lecture style.
You can tell she really enjoys what she's doing.
RACHAEL IS INCREDIBLE!!! She is the nicest person you will ever meet. She cares so deeply about the way that you learn, and she really wants you to enjoy the course. Her office hours were accessible, and if you couldn't attend, she would literally reorganize her schedule to see you. The way that everyday class was formatted was perfect. She alternated teaching and giving us practice problems to work out, and if you didn't understand, she was so eager to help you. She is everything you could want in a professor! Especially in a class most people are just trying to bang out for premed or distros.
She understands the material very well and knows how to teach it.
Very clear, concise, and enthusiastic. Was sure to ask if anyone had questions and to answer them well.
Being engaging and has students walk through their questions to find solutions.

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

Comments
None that come to mind
I don't think I really benefitted from group activity, especially on concepts that we hadn't covered yet, because I never knew if we were doing them right.
none
Sometimes would just give worksheets instead of teaching the material and could be difficult to complete before the content was taught.
The sticks with names put people on the spot.
Trying to simulate group involvement. "Name sticks" made it seem like I was in a middle school class.
NA
None
Sometimes Dr. Norton OVER simplifies concepts, so when I got to hard homework problems or problems in the discussion section I was unprepared.
Nope, just maybe have the practice exams reflect the real exams better.
Sometimes she was very vague.
none
More time could be dedicated towards harder problems during lecture.
N'

### Can you offer suggestions for improvement?

Comments
Overall, Norton is a great teacher. A students poor performance is not a reflection of her effort, its just a very hard class.
no
Be sure to lecture the topics before worksheets are given. Do examples in class comparable to what is on the exams.
No sticks with names!
N'
NA
None
Do more challenging examples in class.
nope
Do more challenging examples in class.
nope
Spend more time on harder problems to prepare students for the exams more.
I really didn't like the "get into pairs/small groups and do this worksheet" portions of class.

**What in-class activity (with instructor Rachael Norton) was most beneficial to your learning: group activity with piece-wise functions on the first day, limit laws worksheet, Desmos activity in the library, differentiation formulas worksheet, chain rule in pairs activity, proving inverse trig function derivatives in groups, derivative tests worksheet, working in groups on related rates problems/optimization problems/curve sketching, etc? Why?**

Comments
Group activities and walking through problems
chain rule in pairs because we had already learned the material and used the activity to practice.
Honestly none really helped all that much.
Demos was helpful and working through problems in groups.
The worksheets because they forced us to draw our own conclusions and reason through theories and rules
In-class activities were not beneficial to my learning; lectures with example problems would have been more beneficial
Working in groups on the optimization and related problems was helpful; those are harder and a bit more complex, having more than one person to think about those problems helped.
chain rules in pairs was good, fun.
Chain rule activity, it did a great job of explaining the concept to me
Differentiation formulas worksheet. It was straightforward and organized the concepts in a way that made sense and was easy to follow.
proving inverse trig derivatives because it helped me remember/learn them, which I've struggled with in the past.
I love worksheets
limit laws, we used them throughout the quarter
I definitely liked the differentiation formulas worksheets we did because it allowed us as a class to work out stuff together. It helped all of us learn it was great.
Desmos. It helped me visualize what I was learning.
Differentiation formulas worksheet, because it organized a cheat-sheet sort of thing very easily.
Desmos as I could very quickly and clearly see what a derivative was
All of the activities were beneficial, it made me learn the material a lot better

**What in-class activity (with instructor Rachael Norton) was least beneficial to your learning: group activity with piece-wise functions on the first day, limit laws worksheet, Desmos activity in the library, differentiation formulas worksheet, chain rule in pairs activity, proving inverse trig function derivatives in groups, derivative tests worksheet, working in groups on related rates problems/optimization problems/curve sketching, etc? Why? What could Rachael do differently to make that concept clearer?**

Comments
Desmos activity in the library because I had already been familiar with demos but I'm sure it was beneficial to others.
None really helped.
Pair activities because it was way too much trouble for something that was not helpful useful at all on exams.
The moving ones because they took up a lot of time.
Most group activities, I felt like it was a less productive usage of time. I would recommend less in class group activities.
The Desmos activity in the library wasn't especially helpful, I think that if we just looked at the graph of a few different functions in a normal class setting we could have learned mostly the same thing.
NA
Desmos activity, I never understood exactly the material for that one. Possibly make the worksheet a little less vague
Desmos activity. If I remember correctly that was supposed to introduce us to derivatives, but it made it WAY more complicated than it needed to be. Giving us the definition of a derivative formula and telling us that derivative = slope would have been enough.
Desmos maybe because my group messed up early and then it was pretty confusing the rest of the time.
desmos
group work over related rates/optimization, I still don't understand it very well. Do more in class examples.
I thought they were all great.
Chain rule in pairs. It helped but it seemed a bit too basic.
Desmos activity, related rates problems/optimization problems, curve sketching because I didn't like working through these types of word problems/longer problems in groups. Would rather do it as a class and then maybe alone and just ask neighbor for help if needed.
working in groups as I am a weaker student in this class and my partners would often work ahead of me meaning that I mostly saw how to solve these problems after seeing them done as opposed to doing them for the first time on my own- which often lead me to having a false confidence over the material.
least was the desmos activity, because of the fact that we do not use graphing calculators for the midterms or final

## What was the most memorable part of the lecture and/or office hours (with instructor Rachael Norton)?

Comments
Going on my midterms
The classroom was very segregated. The people who knew what was going on sat on the loud side and the people that were struggling sat on the quiet side and contributed very little.
Calling her Rachel.
When she said she called her mom to tell her that it snowed :)
Rachel smiles and laughs no matter what, even when it was gross and rainy out. Loved her!!
N'
Rachael was really helpful whenever I would come to office hours to ask questions about the WebAssign and the midterms.
loved her enthusiasm about the material regardless of the class's often lack there of ...
How willing Rachael was to help students
unsure
Rachael
She was always very happy.
Honestly I know it's pretty corny but she never forgot a name. It makes so much of a difference when your professor sees you as a person and not a dot in a lecture hall. it made me want to care more about the class!
Learning about Squeeze Theorem because the teacher was very enthusiastic about that subject!
Rachael being very helpful in office hours before the second midterm
My instructor's helpfulness and willingness to help me learn the answers to my questions.