

This sequence is for people who want to know *why* math works, for the people who hate when their questions are answered with “it just works that way.” Advanced Calculus will tell you why it works and make you regret ever asking.

Okay, that last bit is just me being overdramatic. Personally, I have zero regrets having taken this sequence. I thought college math would be more of the same number-crunching I did in high school, and I am so glad I was wrong. I really love how these courses break everything down into the fundamental rules, and then build everything up from there. You start off proving that one does not equal zero, and by the end you will know how to prove theorems that others accept without a second thought. This sequence allows you to jump right into learning math at higher levels, and afterwards you will feel prepared to take on the rest of your math classes, including graduate-level classes, if you feel so inclined.

Even if you don't plan on majoring in math, this sequence is still an excellent option for anyone going into a highly-quantitative field. You practice your critical thinking skills constantly. Writing proofs will teach you how to form logically sound arguments: you'll find yourself reaffirming what you already know, checking for cases where your statement may not apply, and making sure there is a theorem to support each step of your argument. So even if you don't think you'll be writing purely mathematical proofs in your future, I would still highly recommend taking this course.

Now, this is the part of the pharmaceutical commercial where after explaining the benefits of the drug, you have to list the harmful side effects\*. These classes are by no means easy. You really have to commit if you plan on doing well. Getting an A is definitely attainable, but it all depends on how much work you are willing to put into it. Be prepared to spend a lot of time on your homework. If you were like me in high school, maybe you were still able to pull an A without doing the homework. Nope, you can't do that anymore. Like, even if you don't take this sequence, please do all your homework. In these classes especially, do the homework, go to office hours, ask questions, and try to really understand what you are doing. The Advanced Calculus professors are amazing people who want you to succeed, so make sure you talk to them!

One last piece of advice: make some friends / a study group for Advanced Calculus. You will be with most of these people 3-4 semesters, and it is easier (and more fun) to get through these classes with the support of your classmates. Have study sessions, defend your solutions against one another, and laugh a bit.

\*Below is a list of side-effects, purely for comedic purposes that may not be the best for advertising (or maybe it would be, because high school me would be intrigued)

- Phobia of numbers greater than 2
- Staring-at-the-book-for-hours-hoping-for-inspiration syndrome
- Episodes of spending hours trying to work through a problem only to discover there was a simpler solution that would have taken severely less time
- Episodes of spending hours trying to work through a problem only to discover you wrote it down incorrectly
- Hallucinations and/or dreams involving greek letters
- Tears
- Urge to make mathematical memes