

HOW TO SUCCEED IN MAT319/320

MAT319/320 have a reputation for being difficult, partly because many students who have previously done well at math do poorly in MAT319/320. This assessment is not quite right – the kind of thinking required for MAT319/320 is different from, but not harder than, math skill you have already learned. I hope that the following advice will help you adjust to this course.

- (1) **Getting the right answer is not the goal.** Unlike in previous math courses, you are usually not try to figure out the right answer in homework and exam questions. Instead, the goal is to thoroughly understand why an answer is right, and more importantly, *demonstrate through clear communication* that you have a precise understanding.
- (2) **Being slow and careful is the most important thing in this class.** In calculus, if you skip steps in a problem, it increases the likelihood that you will make a mistake. In MAT319/320, if you skip steps, your proof is incomplete. The most common way to lose points in this class is to think that something is “obvious” and does not require justification. Never hurry a proof. Take your time and be precise. (Obviously, and unfortunately, there is time pressure during exams. Follow the above advice to the best of your ability, and come talk to me well before exams if you are worried about running out of time.)
- (3) **Anyone can succeed in this class.** If you want to do well in the class and are worried you won’t, come to my office hours early and often. You *can* learn this material, but
- (4) **You will get frustrated.** In this class, you are learning a new kind of thinking, practically a new language. Don’t feel bad because you get confused about something “easy.” Things that appear easy can be complicated. Have faith – when you carefully go through the details, you will understand.
- (5) **Talking to other people is necessary.** The more time you spend talking to other people about this class, the more clearly you will understand. Go to office hours, talk to your classmates. But also, be careful about how you talk. It is only useful if you go slowly and say every step. And be a good learning partner – don’t do all the talking, be willing to listen.
- (6) **This is a basically a course in precision.** The key to earning points on exams and homework — and the key to getting anything out of this course — is to be absolutely precise with every word that you say. You may have a good idea of how to solve a problem, but if the idea is badly communicated, then that good idea won’t come across to me (or your grader).