

Being Prepared For Calculus

Here are some comments and hints that I hope will help you make your study time more efficient, and give you some perspective on how to show me what you know, so that your grade is a true reflection of your abilities.

- There are 2 levels of learning in calculus – 1) understanding the basic concepts, and 2) using that understanding to solve problems. As a professor, the most common complaint I hear from students who do poorly on exams is “I understand the material, but I still screwed up the test!”. These students have failed to realize that conceptual understanding is only half the battle. **Don’t trick yourself into thinking that you are prepared for an exam simply because you have an intuitive understanding of the material.** Intuition is important, but you are graded on details, so make sure you know how to solve problems.
- Keep up with the schedule. We move very quickly through the course. If you get behind by just a few days, it could screw up your whole semester because each section relies heavily on previous sections. If you get behind, get some help right away!
- Be prepared for the exams. The single most important thing you can do is KNOW WHAT TO EXPECT ON THE EXAM. Write an outline of the material: a list of concepts, a list of formulas, a list of standard problems. This way, you won’t be surprised by a problem, and hence won’t waste exam time trying to figure out what I’m asking.
- Understand the basic concepts (develop intuition):
 - Read the section briefly (15 minutes) before lecture, so the lecture will be more understandable.
 - Attend the lecture, pay attention, and don’t talk to your neighbors.
 - Read the section in detail after lecture.
 - Do the assigned homework problems, and more if you need to.
 - For a few minutes, THINK about the material – its relevance, its relation to previous material, etc. This isn’t easy, but it’s a great habit to get into.
- Be able to solve problems (develop analytic skills):
 - Avoid “stupid little mistakes”. Work slower if you are prone to doing this. Get in the habit of expecting yourself to get it right the first time.
 - If you get stuck on a problem, step back and check your work. Identify all the places where you *might* have done something wrong. Don’t give up after 30 seconds! We all have the tendency to spend time doing the things we do well and ignore the things we do poorly. As a student, this is the worst thing you can do. If you have trouble with algebra, work on it.
- Communicate your answers clearly:
 - Write neatly, clearly and grammatically.
 - Use correct notation.
 - SHOW YOUR WORK to reveal your thought processes. I am not telepathic. I cannot grade you on what you *know*; I have to grade you on what you *write*.
- Don’t be afraid to ask questions. You may have the feeling that people think you’re dumb if you ask a lot of questions. In fact, the opposite is true.