Welcome and friendly advice

Welcome to the Engineering sections of Math 231. This course emphasizes different topics from the traditional sections, and it will ask you to do more applied (and in some cases more sophisticated) types of problems. The goal of the course is for you to learn calculus deeply enough to apply it to problems in science and engineering applications. This is not an easy course, but it has been designed carefully by Engineering and Mathematics faculty to give you the resources which you need to succeed to the best of your ability. All of the faculty and teaching assistants involved in the class are dedicated to your success.

While we can provide you with the tools, the job of learning is of course yours. Although every student learns material in their own way, we would like to share some advice (based on our many years of experience teaching calculus).

- Your professors tend to stress things which they think are important. If we spend a lot of time with a particular sort of problem in class or on the homework, then you should expect to see similar problems on the exams.
- Read the book, and compare the material there with your notes from class, so you can see which topics we have stressed. Make notes of things which you do not understand, so that you can clear them up later.
- Do lots of problems. Math is not a spectator sport. We have been doing calculus for decades, we are good at it, and we can make it look easy. But you have to struggle with the material (as we did a long time ago) in order to make sense of it for yourself.
- Use the resources which you find helpful. Talk with other students. Form study groups in your dorms. Find a TA you like and visit their tutoring hours. Use the online resources associated to the text book.
- At some point, everyone will be stuck on a problem – this is a fact of mathematics. What can you do? The only real mistake you can make is to do nothing – there are lots of possible good suggestions.
  - Write down what you know and what you want to know—it is crucial to know what the goal of the problem is.
  - Try to figure out which material from class and the text is relevant. Often times it is easiest to rule out things which are not relevant.
  - Does this remind you of a problem you have done before? Would those techniques be helpful?
  - Talk to a friend. Talking out loud about a problem, even if you are confused, helps you to understand your own thinking.
  - Be honest with yourself about what you absolutely know is true and what you think might be true.
  - Be honest with yourself about parts of the question which you don’t understand.
  - If you are really getting nowhere, take a break and work on something else.
  - Develop your own strategies—everyone is different.

We would also like to remind you that the Engineering Faculty associated to the class (Professors Dankowicz and Pecknold) are available to discuss any issues which you have pertaining to your engineering major. This is a valuable resource which you are encouraged to use.

Again, welcome to the Engineering sections of Math 231. Please contact us by e-mail or see us in person if you have any questions or concerns related to the course.