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 more sophisticated) types of problems. We want you to learn calculus deeply enough to apply it to problems in science and engineering. 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 want to share some advice, based on our many years of experience teaching calculus.

- Your professors 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 that 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 with a TA, or with your professor after class.
- 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. Use the online resources associated with the text book. Form study groups in your dorms. Find a TA you like and visit their hours at the Tutoring Room.
- At some point, everyone will be stuck on a problem – this is a fact of life in mathematics. What can you do? The only real mistake you can make is to do nothing! Here are some suggestions to get you started.
  - Write down what you know and what you want to know--it is crucial to state clearly what the goal of the problem is.
  - Try to figure out which material from class and from the text is relevant. Often times it is easiest to rule out topics which are not relevant.
  - Does the problem remind you of one 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 merely 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.

The Engineering faculty member associated to the class is Professor Harry Dankowicz. He is a valuable source of advice, and he welcomes the chance to talk with you about any issues pertaining to your engineering major.

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