

July 2, 2009

University of South Alabama Students
Enrolled in the Mathematical Sciences

Dear Mathematics & Statistics Students:

Your instructor and I want you to succeed in your course work. Your success reflects positively upon our endeavors. Here are some tips that I have found useful.

1. The mathematical sciences are especially difficult if you don't try the problems yourselves. If you use a tutor, don't let the tutor work your problems for you. You can't learn how to play basketball by watching Michael Jordan play.
2. If you are having trouble, find the first point at which you are confused, analyze the tricky part, and find an explanation in your notes or in your text. Work through that explanation and return to the problem. Pinpoint the idea that confuses you. Then and only then ask your instructor for specific help. In particular, it is hard for your instructor to interpret the too-general phrase, "I just don't understand!"
3. Working homework is necessary but doing only what's assigned is not sufficient for success in the course. In courses that gave me trouble, I worked problems many times. I read and re-read the text. I was not satisfied until I could work a problem without a mistake. Focus actively and with awareness on the subject for extended periods of time. Don't just sit and stare.
4. Read your text! Your instructor can, at best, give a summary of the material presented in your text. There will be material on your test that is not explicitly covered in class. That material will be covered in your textbook, so read it thoroughly. The combination of the instructor's and the text author's points of view paints a complete picture of the subject.
5. Be prepared to memorize complicated definitions and complicated algorithms. Memorization does lead to understanding. The paraphrasing of definitions in the mathematical sciences is a dangerous endeavor! Word order matters. Mathematical terms can have English synonyms with different mathematical meanings; so don't substitute. Use the original word.
6. Don't fall behind in your work for class. Work at a steady pace. All of your mathematical work, even if you don't solve the problem at hand, will lead to understanding.
7. Your instructor and I expect that you know the basic rules of arithmetic. Are you familiar with both decimal and fractional representations of numbers? When you use a calculator, can you interpret the output? Can you recognize when the calculator's values don't make sense? If you don't know something, then go to the tutoring lab to re-learn it! Mathematical research is "search" and "re-search."

8. You may think that mathematics does not affect your life. It does. You will wrestle with car payments, financially plan for your retirement, compare costs of products and services and use increasingly sophisticated computer tools. Malicious people take advantage of those who don't have mathematical skill. Your job performance will be enhanced when you can do math better than others. Students in the medical arts beware. Lives depend on your ability to calculate.

Again, I wish you success in your mathematical endeavors. You can do well in your courses in the mathematical science! Work problems, learn the terminology and study as if your life depends on it. It does.

Sincerely,

J. Scott Carter, Chair Department of
Mathematics and Statistics