A Note from the Coordinator

Welcome to Math 117: A Survey of Calculus! In this course, you will be experiencing the basic concepts of calculus with an eye toward using these concepts to model physical phenomena. There are two major "kinds" of calculus: "differential" and "integral". Each was developed to address a particular general problem, each of which turns out to have many applications. This course will address differential calculus in a little more than the first half of the quarter and integral calculus in the second half. In each half, the general problem will be discussed, certain needed skills will be practiced, and (finally) phenomena that the general problem models will be examined. We will also discover that differential and integral calculus are related in a special way!

Because we are limited to a ten week course, most of the phenomena we talk about will be those that deal with functions of one variable ("y= f(x)"). That is, we will be mostly dealing with two-dimensional concepts and applications (with a few three-dimensional exceptions that utilize functions of one variable). Most of these concepts, however, generalize to the three-dimensional case; that is, the world you will be working in! Thus, we may occasionally discuss these generalizations, although they will not be required material in the course (The later chapters of the text cover this material). There will be ways of modeling phenomena that the ten week constraint does not allow us to deal with: in particular, modeling with "parametric equations" and "vector calculus". The same basic concepts and skills we will talk about are used in these paradigms and you may see them occasionally mentioned in the text. Unfortunately, time does not permit us to investigate them.

Please note that the algebraic skills we learn and practice in the course will not be as in depth as other calculus courses you may have previously experienced. This will be particularly true in integral calculus. The reason for this is so more time can be devoted to the concepts of calculus and how these concepts model "real-world" applications.

In order to get the most out of this course, it is vital that you keep up with the material! This means especially that you: (1) Keep up with the homework assignments and (2) When you need help, you get it as soon as possible! There are a lot of problems assigned as homework because you will not learn calculus (or anything else) unless you immerse yourself in it. To further motivate you to do homework (and also reward you for the effort put forth), there will be about ten homework collections (roughly once per week with the problems and due dates announced in lecture).

I do not mind if, and in fact encourage that, you work together on homework assignments. But please remember to submit your own work and not work copied from another person. Also, it is vital that you show the work you did to obtain the answer. We want to see what you are thinking as you attack a problem. If we deem that we cannot get the answer without a certain amount of work, we will assume that you need to do work, too! Thus, answers without supporting work will not be given credit on homework (or exams), even if the answer is correct. NOTE: Certain problems can be solved graphically or numerically on a graphing calculator. That is fine, but in many cases, we will ask for supporting algebraic work as well!

In recitation sections, please make sure you TRY a problem before you ask for a solution. This also goes for the homework assignments: please try a problem as best you can before putting a question mark next to it. If you find yourself putting many question marks down, this is most likely an indication that you need to see one of us for personal help ASAP!!

Finally, because we want to present mathematics as a problem-solving process instead of a collection of facts to be memorized, you will be allowed to bring an 8.5 inch by 11 inch sheet of notes to the midterm exam (both sides). You may bring two such sheets to the final exam.

Best of luck this quarter!!