MA 271 Calculus with Applications

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Office hours:
3:00 M W Th F
By Appointment:
12:30, 4:00 M W Th F
6:30 pm Tu Th

Prerequisites: MA103, MA104, MA105, or equivalent.

Text: *Calculus Concepts*, LaTorre, Kenelly, Fetta, Harris, & Carpenter , 2nd Edition

The books in the University Bookstore come packaged with a Graphing Calculator Instruction Guide. This is not required, but you may find it useful, especially if you don't have much experience with using TI-Interactive or a graphing calculator to solve problems. It is keyed to the examples and exercises in the textbook. It gives specific instructions for the TI-83 and TI–86 calculators, but other calculators and TI-Interactive on the laptops are similar enough to give you an idea how to set up the problems on whatever equipment you have.

Computers & Calculators:

We will be using laptop computers in the course.
At times, you may be able to use a graphing calculator, such as TI-83, TI-86, or TI-89.

We will frequently be working on problems in class – so you will need to have either a laptop or suitable calculator with you.

University-owned laptops have the following software:

- TI-Interactive
- Excel spreadsheet

If you will be using a non-University-owned laptop, check with me about what software you will need. (You will probably want to have TI-Interactive and a spreadsheet.)

If you do not have a laptop, check with me about what to do.

Other Supplies:

"See-through" (transparent) acrylic ruler – small 6" size is fine – for reading graphs, slopes, etc.

General Information:

This is a one-semester calculus course with an emphasis on applications.
We will focus on understanding and problem-solving.
Current technology, using computers and calculators, is a powerful tool that can be used not only to by-pass tedious and difficult mathematical manipulations, but can also be used to help see important mathematical connections and patterns.

The book contains a lot of "real" data. We will start by looking at how to find a good mathematical "model" for the data. Then we will learn how to use calculus to solve problems using the data and the models.

Calculus is the study of "change" – the thing changing might be the speed of a car or falling object, the number of cases of a disease in an epidemic, the number of deer in a population, the number of people owning cell phones, the temperature of an object, etc. We may be interested in when the quantity is changing fastest or when it reaches a maximum. Calculus can help us to design an "optimal" container – what shape would be best for a 20-ounce aluminum can if you want to use as little aluminum as possible – how does the surface area change as you change the radius of the can?

Grades will be based on exams, quizzes, and assignments, with the exams counting most heavily.
Some assignments will be done individually, and some will be done in small groups.
You should expect fairly frequent quizzes (announced at least a day in advance).
Exams will be approximately at the end of each chapter, plus a final exam and probably a midterm exam.

We will not have time to cover all the chapters in the book. We will probably cover chapters 1 through 7 and perhaps a few topics from later chapters.

Physical Disabilities:

If you have a need for disability-related accommodations or services, please inform your professor or the Office of Student Support and Disability Services at 1104 University Center (phone: 227-1737) Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and university