

MATH 130: SURVEY OF CALCULUS

2012 SPRING

LUBY LIAO

1. Text

- *Calculus with Applications*, by Lial et al, **9th Edition**, Pearson

2. The course

Calculus is a subject which is beautiful in its own right and with profound applications in many elds. We will start with a discussion of functions (Chapter 2), which should serve as an important review. We will continue then with derivatives and integrals (Chapters 3 to 7). The aim is for you to:

- understand derivative as a limit, as the slope of a tangent line, and as instanteneous rate of change.
- calculate derivatives and use them to solve problems.
- understand denite integral as a limit of sums, approximate integrals, evaluate them via the Fundamental Theorem of Calculus, and use them to solve problems.

Although the primary purpose of this course is to teach the fundamental ideas of Calculus, a crucial secondary purpose is to:

- Make you a better problem solver.
- Apply Calculus to solve problems in other fields such as business, and biology. The title of our textbok is *Calculus with Applications*. Thus, one of its features is an emphasis on applications to other elds. Not only is Calculus useful in other elds, but also seeing how it is applied deepens our understanding of the concept and illuminates its formal denition. Specifically,
 - you will set up functions and equations to model applications, and use the techniques of Calculus to nd relevant solutions.
 - Reaching an answer is seldom enough in mathematics. It is also important to learn to write clear and complete solutions to mathematical problems, show correct reasoning, be precise in details, and communicate your solution and thought process effectively to others.

3. Grading System

Your grade consists of four components:

1. **15%** Quizzes
2. **30%** Homework Assignments
3. **24%** Two Tests
4. **31%** Comprehensive Final

There will be no makeup for quizzes though you may be excused for legitimate reasons. Late assignments will be assessed 20% penalty for each day late. Your grade is decided by your overall percentage and the test scores.

4. Final

- 8-10 Wednesday, May 23, 2012

5. Office Hours, Email, Web site and other information

Web Site <http://zen.sandiego.edu>

Office Serra 146

Office Hours

10 to 12 MWF, and by appointment.

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