

FD'U

MA210-01

MA210-SL-01

MA210 CALCULUS I (4)

Fall 2001

CUH section: TR 9:30 - 10:50 & R 12:30 - 1:45 HH39/37 (MA210-01)

SLH section: MWF 1:55 - 3:05 BH Room 4 (MA210-SL-01)

INSTRUCTOR: DR. CHOCK Y. WONG

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Office Hours: MTWRF 11:00-11:55am, T 2:00-3:00, or by appointments.

Course Description: This is the first part of a three-semester sequence of differential and integral calculus. Major topics include limits and continuity, differentiation and integration of algebraic functions and trigonometric functions, and basic applications.

Prerequisites: Precalculus (MA110 or equivalent), or placement test.

Text Book: Larson/Hoststler/Edwards: CALCULUS Of A Single Variable (6th edition).

Objectives: By taking this course, the student will

- (1) gain understanding of the concept of limits;
- (2) gain understanding of the continuity of functions;
- (3) gain understanding of the concept of the derivative, and how it is related to the behavior of a function;
- (4) develop skills to compute derivatives, and demonstrate a comprehension to use 8 basic formulas and 5 general rules for differentiation;
- (5) develop skills to use derivatives in the following applications: Critical point analysis, graph sketching, and optimization problems;
- (6) gain understanding of the concepts of indefinite integration and definite integration, and the Fundamental Theorem of Calculus;
- (7) develop skills to calculate integrals, and demonstrate a comprehension to handle the basic antidifferentiation formulas and the U-substitution method;
- (8) develop skills to solve applied problems using integrals.

Topics: Chapters 1 to 4 and selected sections from Chapter 6 will be covered.

- (1) Limits and continuity. (Ch.1)
- (2) Differentiation. (Ch.2)
- (3) The Mean Value Theorem and applications of differentiation. (Ch.3)
- (4) Definite and indefinite integration. (Ch.4)
- (5) Applications of the integral in geometry: Areas, volumes, and arc lengths. (§§6.1-6.4)

Homework: There will be two sets of homework assignments for each subtopic (containing more than one section in general) of the course:

(1) Selected odd numbered exercises from the text book, for *basic training* purpose. You may work through those problems (*on your own, need not turn in*) to make sure you have grasped the basic material of the subtopic;

(2) **Handout worksheets** which may contain deeper problems and require better understanding of the material and more skills to complete. **Turn in these worksheets on time for grading.** The due day of a worksheet is usually a week from the day it is assigned. It is important to turn

in your homework **on time** so that the instructor can adjust the pace of the course from time to time (e.g., whether or not extra time and more instructions are needed for a subtopic) and move the whole class forward. Late homework may receive grading penalty (up to 15% reduction for an one-day delay).

Quizzes and Exams:

10 quizzes (9 best scores will be counted), one mid-term exam (to cover Ch.1 & Ch.2, @ Week 8) and an accumulated Final Exam will be given. In general, NO makeup quiz is allowed, except for documented medical reasons. (Grading penalty may apply to makeup quizzes.)

Grading:

HOMEWORK:	33% of the total
QUIZZES:	17% of the total
Mid-term EXAM:	17% of the total
FINAL EXAM:	33% of the total