MA210 CALCULUS I (4)

Fall 2000
TR 11:00 – 12:20 & T 12:30 – 1:50   HH37
INSTRUCTOR: DR. CHOCK Y. WONG

Office: Henry Hall 018   (Phone: 739-4682)

Office Hours: M 11:00–11:55am, W 12:00–12:50pm, and MTWRF 2:00–3:00pm.

Course Description: This is the first part of a three-semester sequence of differential and integral calculus. Major topics are limits and continuity, differentiation and integration of algebraic functions and trigonometric functions, including some 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) You'll be given a list of 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) You'll be given handout wooksheets which may contain deeper problems and require better understanding of the material and more skills to complete. **You must turn in these worksheets on time for grading.** The due day of a worksheet is usually Wednesday of the following week. Late work may receive grading penalty (up to 20% reduction for one-day late).

There may be some computer Lab assignments as well, which should be done on time in the MATH LAB (HH020), and a MATH LAB tutor's signature must be present on your paper.

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. Please note that NO make-up quiz will be allowed (to discourage class absence).

Grading:

HOMEWORK:	33% of the total
QUIZZES:	17% of the total
Mid-term EXAM:	16% of the total
FINAL EXAM:	33% of the total