MATH 150 Calculus I
Summer 2004

Course Information:

- **Class Location & Time:** PH0304, MTWR 11:00-12:50pm

- **Instructor:** Dr. Koung Hee Leem, kleem@siue.edu, 650-2366, SL 1331,
  Office Hours : MTWR 10:00-11:00pm or by appointment.

Course Website: *http://www.siue.edu/~kleem/math150S.html*
 Pay close attention to the course website. Homework assignments and other information will be posted.

Textbook:*Calculus, 8th Edition* by Varberg, Purcell, and Rigdon.
 Student Solution Manual is available in bookstore.

Prerequisite: MATH 125 or equivalent, with a grade of C.

Course Description:
 This course is about the fundamental concepts of calculus. The course covers limits, continuity, derivatives, Mean Value Theorem, applications, Integrals, Fundamental Theorem of Calculus, integration techniques, applications.

1. *Chapter 2*, Functions and Limits
   Review on Operations of Functions and Trigonometric Functions. Limit; Limit Theorems; Limits involving Trigonometric Functions; Limits at Infinity; Continuity of Functions.

2. *Chapter 3*, The Derivatives
   Two problems with one theme; The Derivative; Rules for finding Derivatives; Derivatives of Trigonometric Functions; The Chain Rule; Leibniz Notations; Higher-order Derivatives; Implicit Differentiations; Related Rates; Differentials and Approximations.

3. *Chapter 4*, Applications of the Derivative
   Maxima and Minima; Monotonicity and Concavity; Local Maxima and Local Minima; Graphing; Mean Value Theorem.

4. *Chapter 5*, The Integral
   Antiderivative; Introduction to Differential Equations; Sums and $\sum$ Notation; Introduction to Area; Definite Integral; First Fundamental Theorem of Calculus; Evaluating Definite Integrals.

5. *Chapter 7*, Transcendental Functions
   Natural Logarithm Function; Inverse Function and Their Derivatives; Natural Exponential Functions; General Exponential and Logarithmic Functions; Exponential Growth and Decay; Linear First-order Differential Functions; Inverse Trigonometric Functions and Their Derivatives; Hyperbolic Functions.

Grading Scheme:

The final grade is based on standard grading scale: 100-90 A, 89-80 B, etc., and it will be based on exams and homework assignments, as follows:

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10%          Quizzes (6 best grades out of 7)
60%          Three Midterms
30%          Final
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Quiz will be given every Thursday except exam dates. Three midterms are given on the following dates:

June 10, July 1, July 22

Final exam is comprehensive and from 9:00-10:40am on Thursday, August 5.

To do well in Calculus:

Come to the class regularly and prepared.

Do all the homework assignments.

If you have difficulty in understanding material and solving homework assignments, see the instructor, the tutors in the Tutor Lab (SL 1224), or discuss with other classmates.

Love Calculus.

Important Notes:

- Attendance at the class is required. Try to arrive ON TIME to each class meeting. Do not leave the class until it is over. When a class is missed, the student is responsible for material covered in class.

- No make-up for Quiz.

- All works on exams and assignments must be your own. The university has a straight forward policy on academic integrity.

- Make-up exam may be given for exams missed due to unavoidable circumstances and compelling situations which are documented.

- Incomplete will not be given as an alternative to a withdrawal.

- The course plan may be modified during the semester. All changes will be announced in class in advance. It is the student's responsibility to be informed of such announced changes.

- Students needing special academic accommodations and who have documented disabilities should make an appointment to discuss these accommodations. Students with disabilities are also encouraged to visit the SIUE Disability Support Services office located in Rendleman Hall, room 1218.

Important Dates:

The last day to withdraw without receiving a grade is June 4. The last day to withdraw from a class without permission of advisor and instructor is June 25. After June 25, but before july 16, students may withdraw from a class but will receive a grade of WP or WE. To receive a WP, you must have a percentage of 60% or above when you drop.

Homework Assignments:

- Problem Set 2.1 : 2, 4, 7, 8, 10, 13, 15, 17, 19, 21.

- Problem Set 2.2 : 1, 3, 11, 12, 15, 16, 18, 23, 33.

- Problem Set 2.3 : 11, 13, 14, 16, 18, 22.

- Problem Set 2.4 : 1, 3, 5, 7, 11, 15, 19, 21, 29, 31, 47, 48, 49.

- Problem Set 2.5 : 7, 8.

- Problem Set 2.6 : 1, 2, 3, 4, 5, 8, 14, 15, 16, 37.

- Problem Set 2.7 : 1-8.

- Problem Set 2.8 : 1-9, 21, 22, 23, 37, 39.

- Problem Set 2.9 : 1-10, 13, 14, 15, 17-21, 38.

- Problem Set 3.1 : 1, 2, 9-15, 17.

- Problem Set 3.2 : 1-5, 7, 9, 13-17, 19-22, 27-29.

- Problem Set 3.3 : 1-45 odd, 50, 51.

- Problem Set 3.4 : 1, 3, 9-13, 19.

- Problem Set 3.5 : 1-11 odd, 14-16, 18, 19, 21, 23, 26, 27, 33, 35, 36, 37, 41.

- Problem Set 3.6 : 5-18, 21, 22, 25-27.

- Problem Set 3.7 : 1-7, 9-11, 14, 29, 20, 32-24.

- Problem Set 3.9 : 1, 2, 4, 5, 6, 7, 12, 13.

- Problem Set 3.10: 1-7 odd, 10, 12, 16, 17, 21-23, 27, 32.

- Problem Set 4.1 : 1-7 odd, 8, 10, 13, 15-21, 23, 27.

- Problem Set 4.2 : 1-7 odd, 8, 11, 13, 14, 15-21, 24.

- Problem Set 4.3 : 1, 3, 6, 7-13 odd, 17, 18, 20, 23, 25, 31.

- Problem Set 4.4 : 1, 3, 5, 7, 8, 19, 20.

- Problem Set 4.6 : 1-5 odd, 9, 13, 15, 17.

- Problem Set 4.7 : 3-11 odd, 15, 17.

- Problem Set 5.1 : 3, 7, 11, 13, 19-37 odd.

- Problem Set 5.2 : 5-17 odd, 18, 21.

- Problem Set 5.3 : 5-33 odd.

- Problem Set 5.4 : 1, 3, 7, 11, 15.

- Problem Set 5.5 : 1, 3, 7, 11, 17.

- Problem Set 5.6 : 1, 5, 9, 11, 15, 19.

- Problem Set 5.7 : 3-11 odd, 15-25 odd, 20, 31, 33, 43.

- Problem Set 5.8 : 3, 7-13 odd, 17, 19, 23, 27, 29, 33, 39, 41, 49, 51.

- Problem Set 7.1 : 1-29 odd, 36.

- Problem Set 7.2 : 1-13 odd, 17-27 odd, 29, 33.

- Problem Set 7.3 : 3-23 odd, 27, 29-35 odd.

- Problem Set 7.4 : 1-7 odd, 9-15(without using calculator), 17-33 odd.

- Problem Set 7.5 : 1-7 odd, 9, 11.

- Problem Set 7.7 : 1-7 odd, 19, 21, 37, 39, 41, 43, 49, 50, 51, 53, 55.

- Problem Set 7.8 : 1, 3, 13-21 odd, 39-43 odd.