COURSE DESCRIPTION
CALCULUS I
MA 125 – CT
SPRING 2011

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF ALABAMA AT BIRMINGHAM

Course Instructor: Dr. H. Zou
Office: CH 480B
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Office Hours: MW, 9:30–10:30AM (or by appointment)

Meeting times: MTWR, 8:00–8:50AM
Meeting location: CH 445
Prerequisite: Grade of C or better in MA 106, MA 107 or equivalent. Any student who has not fulfilled the prerequisite will be dropped from the class.
Credits: 4 semester hours

Important dates:
First day of classes: January 04, 2011
Last day to drop without paying full tuition: January 11, 2011
Martin Luther King Holiday: January 17, 2011
Spring Break: March 13 – 19, 2011
Last day to withdraw with a “W”: March 24, 2011
Last day of class: April 25, 2011
Weather Make-up Days: April 26 – 27, 2011
Test I: near Monday, January 31;
Test II: near Wednesday, February 23;
Test III: near Monday, March 28;
Test IV: near Monday, April 18.
(These dates are approximate and may be slightly shifted due to unforeseen circumstances.)
Final exam: Friday, April 29, 2011, 4:30–7:00PM (Location to be announced.)

Date: December 29, 2010.
Course policies:
- Make sure that you are able to receive e-mail through your Blazer-ID account. Official course announcements may be sent to that address.
- If you wish to request a disability accommodation please contact DSS at 934-4205 or at dss@uab.edu.
- You will be dropped from the class if you have not met the prerequisite.
- The two lowest quiz grades and the two lowest homework grade will be dropped to account for any missed assignments due to illness or any other circumstance. If a test is missed due to a serious verifiable circumstance or official university business, the test grade will be replaced with the properly re-scaled final exam score. You have to advise the instructor of such circumstances before the test, unless it is an emergency; in which case the instructor must be informed as soon as possible.
- No books, notes, or calculators will be allowed during any of the tests or quizzes.

Methods of teaching and learning:
- 59 class meetings of 50 minutes consisting of lectures and discussions of examples and homework problems. Time for quizzes and four in-class tests is also included.
- Students are expected to undertake at least 8 hours of private study and homework per week.
- The online homework system Enhanced WebAssign will be used (look for more information below).

Aims of the course:
Upon successful completion of the course a student
- understands limits from a numerical, graphical and analytic point of view;
- uses limits to define the concepts of continuity and differentiability;
- has a solid understanding of the major results of differential calculus;
- can apply the rules of differentiation;
- is able to apply derivatives to problems related to rates of changes, linear approximations, optimization, and curve sketching; and
- knows the concept of antiderivatives and its use in determining distances and areas.

Course content:
- Motivation: Slopes of tangents, velocity and other difference quotients
- Definition of limit, limit laws, limits involving infinity
- Continuity and classification of discontinuities (singularities), Intermediate Value Theorem
- Tangents, velocities, other rates of change, definition of derivative, and derivatives as functions
- Derivatives of polynomial, exponential functions and trigonometric functions
- Product and quotient rules
- Chain rule, implicit differentiation, related rates
• Derivatives of inverse trigonometric and logarithmic functions
• Indeterminate forms, l’Hospital’s Rule
• Linear Approximations and Newton’s Method
• Maximum and minimum values, Mean Value Theorem, shapes of curves
• Optimization problems
• Antiderivatives, motion problems

Assessment procedures:
• Student achievement will be assessed by the following measures:
  – Regular online homework. Homework will be due one week after assignment. Feedback is provided when wrong answers are given. Students are encouraged to retake the homework problems (with randomly changed parameters) until they obtain correct answers. Five attempts are allowed during the week in which the set is available. Homework contributes 10% to the course average. Problems on tests are modeled after homework problems. Staying on top of homework is therefore extremely important.
  – Sporadic (unannounced or announced) quizzes. Quiz problems are taken from the homework problem sets. This allows students to gauge whether they are ready to work problems in a test situation. Quizzes contribute 12% to the course average.
  – Four 50-minute tests in class including short questions for which either full credit or no credit is awarded (Part I) as well as problems requiring in depth understanding for which partial credit is awarded where appropriate. Each test contributes 12% to the course average.
  – A 150-minute comprehensive final examination including Part I and Part II type problems. The final contributes 30% to the course average.
• Your course performance is your course average (including the final exam score). This is a number between 0 and 100.
• Your final grade is determined according to the following table:
  Course performance:  88-100  75-87  62-74  50-61  below 50
  Final Grade:   A    B    C    D    F

Tips:
• Help is available in the Math Learning Lab (HHB 202).
• By working steadily and regularly, you will increase your chances to succeed in this course.
• Remember, being a full-time student is a full-time job.

How to get started on Enhanced WebAssign:
(1) If you already have a (LOE) WebAssign account created with an access code which was attached to an edition of this book, you can add this course by using the class key below. Otherwise, proceed to the next step.
(2) Go to www.webassign.net and click on I HAVE A CLASS KEY in the LOG IN link.
(3) Enter the following class key (provided by your instructor):
        uab 7048 4753
and proceed. (If prompted for your institution, enter uab.)

(4) The system will prompt you to enter your access code. Enter the access code (which came with your book) and all the requested info. (Note: You may also select “trial period” for the access code. However, the system will require you to enter your access code at some point during the term.)

(5) After your first registration, you can sign in as a returning user.

(6) Should you run into technical problems Enhanced WebAssign provides technical support online and/or by phone.


- Chapter 1: 1.3 – 1.6.
- Chapter 2: 2.1 – 2.8, 4.6 (from Chapter 4).
- Chapter 4: 4.1 – 4.5, 4.7.

Common Courtesies for Any Class:

- Putting your head on your desk resting or sleeping during class is rude. If you need sleep, please go to your room or home - not to class.
- If you need to leave class early, it is polite to tell the instructor before the class starts. Class attendance is expected.
- Please arrive for class a few minutes early so that class can begin without interruption. If there is a problem, let the instructor know.