MATH 121-01, Calculus 1, Fall 1998

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MATH 121 CALCULUS I
MWF 12:40 – 1:40pm (E hour) Buckman 110
Fall 1998

Instructor: Michael Ackerman

Office Hours: 219-N Ohlendorf Hall M 1:45-2:15pm; W 1:45-3pm; F 1:45-2:30 (except on 9/4, 9/25, 10/2, 10/23, 10/30, and 11/2) or by appointment or coincidence.

Email: ackerman@msci.memphis.edu

Phone: 843-3599 (Math Office) or 377-2943 (home) No calls after 11pm!!

Text: CALCULUS (3rd Edition) by James Stewart

Prerequisites: Working knowledge of high school algebra and trigonometry is essential along with a desire to learn calculus.

Course content and goals: Calculus I is the first course in a sequence that introduces the concepts of differential and integral calculus in one variable. We shall investigate many exciting topics in Chapters 1 – 4 and in the beginning of Chapters 5 and 6, including:

- the concepts of limit, differentiation, and integration.
- the rules for computing derivatives.
- applications of the derivative.
- The Fundamental Theorem of Calculus.
- a few techniques in evaluating definite integrals.

It is important that you are able to communicate (both verbally and in writing) the mathematical ideas you learn. This involves explaining how you solved a problem and why the solution makes sense, not just being able to find the solution.

Student Responsibilities: Read each section that we cover. Reading mathematics is usually a slow process. Don't get discouraged if you have to read a passage 2 or 3 times or refer back to previous pages. Even the world's greatest mathematicians have to reread papers and manuscripts to decipher the results.

If you miss a class, you are responsible for finding out what material was covered, familiarizing yourself with it, and preparing any homework due for the next class.

Homework: Homework is assigned after each section we cover. These problems test and reinforce the concepts we covered and, at times, introduce new material. You should work all the problems that I assign (It is always a good idea to do as many odd problems as time permits for more practice.) making sure your solutions are written neatly and completely. (This makes preparing for tests and quizzes much easier.) Spending several hours to complete an assignment and to review the material is not uncommon. I recommend that you set aside at least 2 hours between each class meeting for this purpose. History has demonstrated that those who do so perform better in this class. Working in groups on homework that is not to be turned in for a

grade is encouraged. Any homework that is to be turned in for a grade is to be pledged (see Honor Code below).

If you should experience difficulties with the material or the homework, do not delay in getting help. We have to cover a large amount of material so it can be very difficult to catch up. I am available during office hours and will gladly make appointments to meet with you if you are unable to meet during office hours. In addition, the math department offers Math Help, a student staffed tutorial service. Math Help is available 4 nights per week during the evening and is free of charge. A Math Help schedule is forthcoming.

Honor Code: In this course, by pledging quizzes, tests, and the final exam, you assert that you have neither given nor received aid of any kind from any individual and have completed the exam/quiz/HW/project under the specified parameters (e.g., no book or notes). Pledging any group assignment means that you have worked only with the other members of your group AND that you have contributed significantly to solving and writing up the problem. Please recall that you are responsible for reporting any transgression of the Honor Code that you witness.

Grading: Your grade consists of 3 tests, a quiz/homework score, a project score, and a final exam.

(i) Tests – Each test is worth 15% of your final grade, 45% total. Expect each test toward the end of September, October, and November, respectively. Tests will be announced a week in advance.

(ii) Quiz/Homework – Every week, except during test weeks, expect to be given a 10 point, in-class quiz (usually on Wed. or Fri.) that is similar to the homework assigned. I may collect homework instead of giving a quiz with a random sample of problems to be graded. The material to be covered on a quiz or any homework problems to be turned in will be announced at least one class meeting in advance. Your quiz/homework score is 15% of your final grade.

(iii) Projects – There will be 2 projects (term papers). More specifics will be given as each project is handed out. These projects emphasize the communication aspect of the course. Thus, spelling, grammar, and sentence structure are important in addition to solving the problem at hand. Your project score constitutes 10% of your final grade.

(iv) Final Exam – The final is cumulative and worth 30% of your final grade. Final Exam date: Wednesday, December 16, 1:00pm – 3:30pm.

No make-up quizzes are given, and homework must be turned in on the assigned due date. Missed quizzes or homework receive a zero. If you are going to miss a test, you must see me PRIOR to the exam. A make-up test, IF given, is expected to be more difficult. The final exam can be scaled to replace your lowest TEST grade if it is to your advantage. Note that your quiz/homework grade cannot be replaced.

Below, you will find a list of HW problems that you should be able to solve after the completion of each section. For the conscientious student, those interested in studying mathematics or in earning a top grade, or those who are experiencing some difficulty, you should do as many of the odd numbered exercises in the section we cover as your study time allows.

Section	Page	Problems
1.1	50	3,5
1.2	59	1,2,4,7,15,16,18,19,22(a)
1.3	68	6,12,16,21,29,32,37,41,44,48,51,55,62,65,67
1.5	87	1,2,3,12,14,18,23,30,33,37,45,46,56
1.6	96	1,3,11,14,15
2.1	109	13,14,15,23,33,34,37,40,52,53
2.2	120	4,9,12,13,22,28,34,37,47,51,52,59,68
2.3	130	3,4,7,11,19,24
2.4	137	3,6,7,12,23,24,30,34,39,45,51
2.5	144	1,5,8,13,23,24,37,42,48,57,59
2.6	150	1,3,7,10,13,15,22,23,24
2.7	155	1,3,6,18,19,25,26,27,35,38,39,43
2.8	160	1,5,8,9,10,11,14,18,21,24,29
2.9	168	3,4,7,14,19,30
2.10	173	3,7,9,11,15,25
3.1	188	1,2,4,7,9,14,15,19,26,27,31,36,38,41,47,48,61,63,68
3.2	194	5,8,12,13,17,19,20,27,31,35
3.3	199	1,2,6,7,9,14,18,21,25,41,42
3.4	205	1,4,7,9,12,13,15,18,21,23,24,28,32
3.5	216	9,10,15,19,20,31,41,44,53,54,55,56
3.6	224	4,10,18,24,28
3.8	236	7,9,10,12,13,19,23,26,27,31,33,38
3.10	249	1,5,8,9,12,16,22,27,37,38,49,52,55
4.1	262	3,5,6,12,15,18,21,25,26,31,41,43,44
4.2	271	6,7,12,13,17
4.3	280	8,15,16,17,29,30,33,40,41,43,45,47
4.4	291	1,6,7,9,10,11,22,27,31,38,43,46,63,65,71,75,85
4.5	300	1,4,9,12,18,19,27,37,43,49,53
5.1	312	1,4,8,10,13,14,15,21,29