

Mathematics MAT 201 : Calculus I
Spring 2005
MWF 11:30 am - 12:20 am, Room 105

Instructor: Dr. Brad Emmons

Office: DePerno Hall 121

Telephone: 792-3414 (Don't leave voicemail)

Office Hours: Monday and Friday 12:30 - 1:30 pm, Tuesday and Thursday 1:00 - 2:30 pm

Email: bemmons@utica.edu

Course Materials

Calculus, 3rd edition, by Strauss, Bradley, and Smith (required)

Introduction

You are among a select group of very lucky individuals! You get to study one of the most monumental achievements in human thought. Calculus, independently and simultaneously discovered by Leibnitz and Newton, combines philosophy and mathematics in a beautiful and elegant tapestry of infinite delight. You will marvel with delight at your newfound abilities to solve increasingly sophisticated problems.

Calculus is a branch of mathematics which studies how things change relative to one another. In particular, how things change with respect to time. Through analyzing some basic concepts in depth, we will develop some rather clever techniques for calculation. These techniques can be brought into fruition by attacking real world problems.

In this course we will start out by reviewing some concepts of Algebra. Then we will cover limits and continuity, differentiation, rates of change, and related rates. We will focus on the theory of the subject, as well as some of the more interesting applications.

Exams

There will be a midterm exam given in class as well as a final cumulative exam. The exams will test your ability to work through some of the computations, as well as your ability to apply the techniques to certain applications. The midterm exam is scheduled for Friday, March 11 and will count for 25 percent of your final grade. The final exam will be held on Saturday, May 7 from 9:00 - 11:30 a.m.. The final will count for 30 percent of your final grade. There will be NO make-ups for missed exams. Please look over your schedule as soon as possible. If you see a potential conflict, inform me immediately.

Homework

The best way to learn Mathematics is to solve problems. Homework will be assigned at the end of each class period and collected the following class period. I will choose 4 or 5 problems to grade in each assignment. To earn full credit for a problem, a complete solution to the problem must be submitted. Just writing down the answer will not earn full credit. In addition to points for each graded problem, 5 points on each assignment will count for completeness and neatness of the graded assignment. Late assignments will not be graded, but they will be eligible for the 5 completion points. If you are not in class the day an assignment is collected, you may turn in your assignment into my office later that day. However, your assignment will be considered late. The homework is designed to help you identify where you might have difficulties. If you encounter any trouble with an assignment or a concept, seek help! The homework will count for 25% of your final grade.

Quizzes

Every other Friday, starting with January 28th, we will have an in-class quiz. There will be a total of 6 quizzes throughout the semester. You should treat the quizzes as mini-exams, covering material from approximately 6 days worth of course work. The quizzes will consist of 4 or 5 problems similar to problems from your graded homework, and they are to make sure that you are keeping up with the concepts presented in class, and to identify where you are having problems before you take the exams. The quizzes will count for 20% of your final grade.

Attendance

Attendance in MAT 201 is extremely important. Although there is no official attendance policy, note that if you are not in class on a particular day, your homework will not be graded for a score. I will also require that you be in class at 11:30 a.m. and no later. If you are late to class, you may stay to enjoy the wonderful learning experience. But your homework grade will suffer.

Grading

Your grade in this course will be based on three main factors: homework, quizzes and exams. The homework will be worth 25% of your final grade, the quizzes 20%, and the exams 55%. In addition to these factors, minor ethereal factors such attendance, class participation, attitude, and improvement over the course of the semester can also affect your grade. To determine your final grade, 90–100% = A, 80–89% = B, 70–79% = C, 60–69% = D, 59 and below = F, with the top two percents receiving a + and the bottom two percents receiving a –.

Calculators

The use of calculators will not be allowed on any quizzes or exams. None of the work will require any sophisticated computations. You may use a calculator when working on your homework to check your work. However, since will not be allowed to use it on the exam, I suggest you do as much work without your calculator as possible.

Important Dates

Tuesday, January 25 – Last Day to Drop/Add
Friday, March 11 – Midterm Exam
Monday, March 14 - Friday, March 18 – Spring Break (no class)
Friday, April 1 – Deadline for WD or P/F
Tuesday, May 3 – Last Day of Classes
Wednesday, May 4, Sunday, May 8 – Study Days
Saturday, May 7, 9:00 a.m. - 11:30 a.m. – Final Exam

Suggestions

Come to class with your homework assignment completed every day
Study for at least 30 minutes each day in addition to completing your homework assignment
Read the section we will be covering *before* we cover it in class
Do not fall behind!
Come to office hours to discuss homework and concepts. I am here to help!

Syllabus

MAT 201 : Calculus I

Term : Spring 2005

Week 1	January 19	Course Policies, Syllabus
	January 21	Section 1.1 – Preliminaries
Week 2	January 24	Section 1.2 – Lines in the Plane
	January 26	Section 1.3 – Functions and Graphs
Week 3	January 28	Section 1.3 – Quiz I
	January 31	Section 1.4 – Inverse Functions
	February 2	Section 1.4
Week 4	February 4	Section 2.1 – The Limit of a Function
	February 7	Section 2.2 – Algebraic Computation of Limits
	February 9	Section 2.2
Week 5	February 11	Section 2.3 – Quiz II
	February 14	Section 2.3 – Continuity
	February 16	Section 2.4 – Exponential and Logarithmic Functions
Week 6	February 18	Section 3.1 – Introduction to the Derivative
	February 21	Section 3.2 – Techniques of Differentiation
	February 23	Section 3.2
Week 7	February 25	Section 3.3 – Quiz III
	February 28	Section 3.3 – Derivatives of Trig, Exp, and Log
	March 2	Section 3.4 – Rates of Change
Week 8	March 4	Section 3.5 – The Chain Rule
	March 7	Section 3.5
	March 9	Review
Week 9	March 11	Midterm Exam
	March 15	NO CLASS
	March 17	NO CLASS
	March 19	NO CLASS
Week 10	March 21	Section 3.6 – Implicit Differentiation
	March 23	Section 3.6
	March 25	Section 3.7 – Related Rates and Applications
Week 11	March 28	Section 3.7
	March 30	Section 3.8 – Linear Approximations and Differentials
	April 1	Section 3.8 – Quiz IV
Week 12	April 4	Section 4.1 – Extreme Values of Functions
	April 6	Section 4.1
	April 8	Section 4.2 – The Mean Value Theorem
Week 13	April 11	Section 4.2
	April 13	Section 4.3 – Sketching Graphs of Functions
	April 15	Section 4.3 – Quiz V
Week 14	April 18	Section 4.4 – Curve Sketching with Asymptotes
	April 20	Section 4.4
	April 22	Section 4.5 – l'Hopital's Rule
Week 15	April 25	Section – 4.5
	April 27	Section 4.6 – Optimization in the Physical Sciences
	April 29	Section 4.6 – Quiz VI
Week 16	May 2	Review