

Mathematics MAT 302 : Calculus IV
Spring 2006
MWF 10:30 am - 11:20 am, FAC 105

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Course Materials

Calculus, 3rd Edition by Strauss, Bradley, Smith (required)

Introduction

MAT 302 is the fourth and final installment of the Calculus sequence here at Utica College. The prerequisites for the course are MAT 301 and a positive attitude. We will cover the calculus for functions of several variables, including partial differentiation, multiple integration, vector analysis, Green's Theorem, and Stokes' Theorem. If there is time, we will introduce some differential equations.

Exams

There will be two in-class exams 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 first exam is scheduled for Friday, February 17 and will count for 20 percent of your final grade. The second exam is scheduled for Friday, March 31 and will count for 20 percent of your final grade. The final exam will be held on Saturday, May 6 from 9:00 a.m. to 11:30 a.m. The final will count for 20 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 20% of your final grade.

Quizzes

Every other Friday, starting with January 27th, 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 302 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 10:30 am and no later. If you are late to class, you may stay to enjoy the wonderful learning experience. However, your homework for the day will be considered late.

Grading

Your grade in this course will be based on three main factors: homework, quizzes and exams. The homework will be worth 20% of your final grade, the quizzes 20%, and the exams 20%. 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 24 – Last Day to Drop/Add
Friday, February 17 – Exam I
Monday, March 13 - Friday, March 17 – Spring Break (no class)
Friday, March 31 – Exam II
Friday, March 31 – Deadline for WD or P/F
Monday, May 1 – Last Day of Classes
Wednesday, May 4, Sunday, May 8 – Study Days
Saturday, May 6, 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 302 : Calculus IV

Term : Spring 2005

Week 1	January 18	Course Policies, Syllabus
	January 20	Section 11.1 – Functions of Several Variables
Week 2	January 23	Section 11.2 – Limits and Continuity
	January 25	Section 11.3 – Partial Derivatives
	January 27	Section 11.4 – Tangent Planes, Quiz I
Week 3	January 30	Section 11.4 – (continued)
	February 1	Section 11.5 – Chain Rules
	February 3	Section 11.6 – Directional Derivatives, Gradient
Week 4	February 6	Section 11.6 – (continued)
	February 8	Section 11.7 – Extrema
	February 10	Section 11.8 – Lagrange Multipliers, Quiz II
Week 5	February 13	Section 11.8 – (continued)
	February 15	Review
	February 17	Exam I
Week 6	February 20	Section 12.1 – Double Integration, Rectangular Regions
	February 22	Section 12.2 – Double Integration, Nonrectangular Regions
	February 24	Section 12.2 – (continued)
Week 7	February 27	Section 12.3 – Double Integrals in Polar Coordinates
	March 1	Section 12.4 – Surface Integrals
	March 3	Section 12.4 – (continued) Quiz III
Week 8	March 6	Section 12.5 – Triple Integrals
	March 8	Section 12.8 – Jacobians : Change of Variables
	March 10	Section 12. 8 – (continued)
Week 9	March 13	NO CLASS
	March 15	NO CLASS
	March 17	NO CLASS
Week 10	March 20	Section 13.1 – Divergence and Curl
	March 22	Section 13.2 – Line Integrals
	March 24	Section 13.2 – (continued) Quiz IV
Week 11	March 27	Section 13.2 – (continued)
	March 29	Review
	March 31	Exam II
Week 12	April 3	Section 13.3 – Fundamental Theorem, Path Independence
	April 5	Section 13.4 – Green’s Theorem
	April 7	Section 13.4 – (continued)
Week 13	April 10	Section 13.5 – Surface Integrals
	April 12	Section 13.6 – Stokes’ Theorem
	April 14	Section 13.6 – (continued) Quiz V
Week 14	April 17	Section 13.7 – Divergence Theorem
	April 19	Section 14.1 – First-Order Differential Equations
	April 21	Section 14.1 – (continued)
Week 15	April 24	Section 14.2 – Second-Order Homogeneous
	April 26	Section 14.3 – Second-Order Nonhomogeneous
	April 28	Section 14.3 – (continued) Quiz VI
Week 16	May 1	Review