

MATH 231, Calculus III

Section 1 meets 11:00-12:05

Spring 2009

Text: Calculus. 5th edition, Stewart
Instructor: Oleg Makhnin
My Office Location: Weir 223
Office Hours: MWF 1:30-3, R 10-12 and by appointment
Phone: 835-5110
E-mail: olegm@nmt.edu
Web Page: <http://www.nmt.edu/~olegm/231/>

Course Objectives

Upon completion of this course, students should be able to:

- Perform algebraic operations on vectors in the plane and 3-space
- Describe lines, planes, and surfaces in 3-space
- Compute the tangent and normal vectors to space curves
- Compute tangential and normal components of acceleration
- Sketch functions of several variables
- Compute tangent plane to surfaces
- Describe and use the Chain Rule
- Compute extreme values of functions of several variables
- Compute multiple integrals
- Compute surface area, mass, and moments

- Compute line integrals and test for independence of path
- State and use Green's, Stokes', Divergence Theorem
- Solve first and second order differential equations

Course Requirements

- Tests: There will be three in-class exams during the semester, worth 100 pts each (approximately 50% of your grade).
- Final: There will be a comprehensive final exam worth 150 pts (approximately 25% of your grade).
- Homework: There will be daily homework assignments, worth 5 pts each (approximately 25% of your grade). Two lowest (or missing) hw scores will be dropped.

Grading

Percent	>90	80-89	70-79	60-69	< 60
Grade	A	B	C	D	F

Your grade will be based on the percentage of total available points you have earned. Grades will be assigned according to the above table. Plusses and minuses will be given. From time to time I will offer extra credit problems. Extra credit points will be used to bump up borderline grades.

Exams

- Calculators will **not** be allowed on the tests except in rare cases when they are necessary.
- Credit will be given only for solutions which show enough steps so that I can understand your method.
- Make-up exams will be given only in cases of documented emergencies.

Homework

- Homework problems will be assigned in class and shown on the website.

- The homework must be stapled in the upper left corner. Do not fold your papers.
- Write your name, the course number, class time, and the assigned problem numbers clearly on the top of the first page.
- Homework must be neatly done. Illegible or messy homework papers will be returned ungraded (0 Credit).
- You must show all your work, so that it is easy to follow how you arrived at the solution.
- It's ok to work together on a problem, but your written solutions should not be identical. Likewise, copying from solutions manual will lead to 0 grade for that assignment, and if repeated, to the F grade for the course and a referral to the Academic Standards Committee.
- Late homework will not be accepted.

Attendance Requirements

It is important that you attend every class scheduled for this course. You are responsible for all announcements and material covered in this class as well as material from the textbook which is assigned but not covered in class.

Changes

The instructor reserves the right to modify this syllabus to meet the needs of the class. It is the student responsibility to attend class regularly and to make note of any change.

Tentative Schedule

Chapter 12: Vectors Chapter 13: Vector functions Exam 1	Weeks 1-4 Week 4
Chapter 14: Partial Derivatives Exam 2	Weeks 5-7 Week 8
Chapter 15: Multiple Integrals Exam 3	Weeks 8-11 Week 11
Chapter 16: Vector Calculus Chapters 9, 17: Differential Equations	Weeks 12-14 Week 15

See the website for updates.