

MATH 222: CALCULUS III – Fall 2005

This course meets two times a week (M & Th: 11:05am – 12:45pm) in RI 267. The following information summarizes the course topics, policies, and philosophy. It also lists pertinent information about the textbook, office hours, and academic honesty.

TEXTBOOK AND CALCULATOR

The text is *Calculus* (Seventh Edition) by Larson, Hostetler, and Edwards. It is published by D.C. Heath and Company. You are welcome to use other sources for supplementary reading. However, homework will be assigned from the Larson, Hostetler, and Edwards text. You are required to have a calculator. It is course policy that you have a TI-86/83/84. I have some experience with other calculators. However, if you are using a different calculator, then you are responsible for learning how to use it! You may not use a TI-89 or other calculator with a computer algebra system package on quizzes and exams.

COURSE OVERVIEW

We will cover sections from Chapters 9 – 14 in the Larson, *et. al.* text. The topics include polar coordinates, parametrized curves, vectors and vector-valued functions. In Chapters 12 and 13, we cover differentiation and integration of functions of several variables. Some of this material are natural extensions of material learned from your Calculus I and Calculus II courses. For this reason, you **must** be proficient with differentiation and integration; if you are not, then start sharpening your skills now! Although we will not cover all of Chapter 14, the material we cover will introduce new relationships between derivatives and integrals (for vector-valued functions). A good understanding of basic trigonometry is crucial; if you don't know it, go learn it now!

YOUR GRADE BROKEN DOWN – FINAL EXAM – MAKE UP POLICY

Frequent Quizzes 300; Tests (2@200) 400; Final Exam 300. Letter grades are awarded by the following maximum percentages (divide the total points by 1000): A- 90%; B- 80%; C- 70%; D- 60%; F < 60%.

There will be frequent (usually once a week) quizzes; most quizzes will be announced. The lowest two quiz scores will be dropped. Homework will be assigned, but not collected. The quizzes will be in the spirit of the homework. I reserve the right to give 'pop' quizzes, if I believe not enough students are doing their homework. There will be two midterms and a final exam. **The final exam will be held on Monday, December 19 from 10:15am – 12:15pm.**

There will be **no** make up quizzes or tests. If you miss two quizzes, those quiz scores will be dropped from your total. If you miss a third quiz, you receive a zero. If you miss a test (for a legitimate reason ... for example, a verifiable illness or a death in the family), we will discuss options for making up the points, usually by increasing the percentage of other graded events.

ACADEMIC HONESTY

It is presumed that you will do your own work on the quizzes and tests. Discussing homework problems with others is encouraged. Cheating includes, but is not limited to, illegal collaboration, copying, using materials not permitted on tests, and assisting others on tests. Anyone found cheating will not be permitted to withdraw and will receive an F for the course. Your academic dean will be informed and a statement will be placed in your permanent file.

OFFICE HOURS **Mon & Thurs** **12:45 – 2:30 pm** **Tues** **8:00 – 9:00pm**

Specific questions regarding homework or lecture may be asked during office hours. If you cannot make any of the scheduled office hours (above), you may schedule an appointment. You may drop by my office and see if you can catch me when I am not busy. Graduate students are given priority in my Tuesday night office hours.

MISCELLANY

The last day to withdraw and receive a 100% refund is September 14. The final day to receive a 50% refund is October 11. The final day to withdraw from a course is November 9. Please consult the Schedule of Courses for other useful information. There will be no class on Thursday, November 24 in observance of the Thanksgiving Day holiday.

My office information is given below. If you want to leave a message, but do not want to risk running into me, I have a mailbox on the 2nd floor of Richardson Hall. You can leave messages at this location. I check my e-mail and phone messages daily.

Michael A. Jones, Ph.D., Associate Professor; jonesm@mail.montclair.edu; 973-655-5448; Richardson Hall 206

Tentative Schedule for the Fall Semester		
Day	Date	Topic/Section
Th	8-Sep	9.1 & 9.2 Conics/Planes/Parametric Equations
M	12-Sep	More 9.2 & 9.3 Calculus and Parametrizations
Th	15-Sep	9.4 & 9.5 Polar Coordinates, Graphs, Arclength
M	19-Sep	10.1 & 10.2 Vectors and Space
Th	22-Sep	10.3 & 10.4 Dot and Cross Products
M	26-Sep	10.5 Lines and Planes in Space
Th	29-Sep	10.6 Surfaces & 10.7 Cylindrical and Spherical Coord.
M	3-Oct	11.1, 11.2, 11.3 Calculus on Vector Functions
Th	6-Oct	11.4 Tangent and Normal Vectors; 11.5 Arclength
M	10-Oct	11.5 Arclength & Review for Midterm 1
Th	13-Oct	Midterm 1
M	17-Oct	12.1 & 12.2 Functions of Several Variables
Th	20-Oct	12.3 & 12.4 Partial Derivatives and Differentials
M	24-Oct	12.4 & 12.5 Differentials and Chain Rules
Th	27-Oct	12.6 Directional Derivatives and Gradients
M	31-Oct	12.7 & 12.8 Tangents/Normals/Extrema
Th	3-Nov	12.8 & 12.9 Extrema and Applications
M	7-Nov	12.10 Lagrange Multipliers
Th	10-Nov	13.1 & 13.2 Iterated Integrals and Double Integrals
M	14-Nov	13.2 & 13.3 Double Integrals and Change of Variables
Th	17-Nov	13.5 & 13.6 Surface Area and Triple Integrals
M	21-Nov	More 13.6 & 13.7 Cylindrical/Spherical in Integration
M	28-Nov	13.8 Jacobians & Review for Midterm 2
Th	1-Dec	Midterm 2
M	5-Dec	14.1 & 14.2 Vector Fields and Line Integrals
Th	8-Dec	14.2 Line Integrals
M	12-Dec	14.3 Conservative Vector Fields and Ind. Of Path
Th	14-Dec	14.4 Green's Theorem; Review
Th	19-Dec	Final Exam (10:15am-12:15pm) [cumulative]

Homework Assignments for Calculus III

Chapter 9

9.1(11,13,21,31,37,43,45,57,68,75,85,87,94,115,119,129)
 9.2(1,3,5,9,15,21,23,33,39-49odd,75)
 9.3(5,7,11,25,27,31,33,37,39,49,51,61)
 9.4(1,3,5,21-35odd,39,47,53,61,113,114)
 9.5(3,5,13,17,39,45,59,63)

Chapter 10

10.1(1,5,9,11,17,31,37,43,99)
 10.2(1,7,9,13-21odd,25,29,41,51,71)
 10.3(1,11,15,19,41,45,73,80,81)
 10.4(11,21,33,45,53,57,59)
 10.5(3,5,9,13,17,19,27,35,39,51,73,92)
 10.6(1-6,7-13odd,21,41,43,43,47,51)
 10.7(13,19,25,31,39,43,51,91,93,95)

Chapter 11

11.1(1-9odd,13,15,23,59,69,70)
 11.2(1,7,9,21,27,29,43,47,51)
 11.3(1-11odd,17,25,28,45)
 11.4(5-11odd,17-29odd)
 11.5(1,3,7-11odd,25,29)

Chapter 12

12.1(17-27odd,31-37odd,49-55odd,69,75,76)
 12.2(3-15odd,19,25,33,35,55,56)
 12.3(5-25odd,29,31,33,45,47,51,57,59,69)
 12.4(3,5,7,11,13,27,28,33)
 12.5(5,6,8,9,15,19,23,33,34,39,51,53)
 12.6(3-11odd,14,17,21,23,27,29,55,81)
 12.7(5,9,11,13,19,21,25,39,43)
 12.8(1,3,7,9,13,21,23,24,31,33,53,55,61)
 12.9(5-10,15,18,19,48)
 12.10(5-11odd,19,21,23,33,36,37,39)

Chapter 13

13.1(1-43odd,47,49,59,61)
 13.2(7,9,13,15,17,21,25,33,35,43,53)
 13.3(9-31odd,59)
 13.5(1,3,5,9,15,21,29,31,42)
 13.6(1,3,5,13,17,18,27)
 13.7(1-5odd,9,13,17,19,32,32)
 13.8(1-15odd,27-30)

Chapter 14

14.1(1-7,9,13,19,21-33odd,37,41,57-63odd,69,71)
 14.2(1-17odd,21,28,29,31,35,37,47-57odd,73)
 14.3(1-7odd,13-19odd,25,27,31,35,50)
 14.4(1-17odd)