

Analysis 20400 section 51 Winter 2007

This is the second quarter of Analysis. In this class we will focus on differentiation of functions of several variables. Of particular importance is the *Inverse Function Theorem* and the *Implicit Function Theorem*. The Inverse Function Theorem tells us when we can expect a function $F : \mathbb{R}^n \rightarrow \mathbb{R}^n$ to have an inverse, at least locally, in terms of the partial derivatives of F . The easiest case of the Implicit Function Theorem tells us when a function $F(x, y) = 0$ defines, implicitly, a function $g(x)$ such that $F(x, g(x)) = 0$.

Instructor: Vigeik Angeltveit

Office: Echhart 333

Email: vigeik@math.uchicago.edu

Website: math.uchicago.edu/~vigeik/204.html

Office phone: 773-702-9845

Office hours: TBD

Problem sessions: TBD

Textbook:

Fitzpatrick, Advanced Calculus, second edition.

Curriculum:

Chapter 4-5, 13-17 of the textbook.

Homework (30%):

Homework will be assigned weekly, due on Friday before 5pm in my mailbox in the basement. No late homework will be accepted. You are encouraged to cooperate, but please write up your own solutions. If you are stuck, come to my office hours and ask for an explanation of what the problem is asking and for a hint.

Midterm (25%):

One hour-long, in-class test will be administered on Wednesday Feb. 7.

Final (45%):

The final exam will be held Tuesday Mar. 13, 4-6pm.

Holidays and reading period:

There is no class on Monday Jan. 15 (Martin Luther King, Jr. day) or Friday Feb. 9 (Undergraduate break). On Mar. 9 we will have a review session.

It is the policy of the Department of Mathematics that the following rules apply to final exams in all undergraduate mathematics courses:

1. The final exam must occur at the time and place designated on the College Final Exam Schedule. In particular, no final examinations may be given during the tenth week of the quarter, except in the case of graduating seniors.
2. Any student who wishes to depart from the scheduled final exam time for the course must receive permission from Paul Sally (office is Ry 350, phone is 2-7388, email is sally@math.uchicago.edu). Instructors are not permitted to excuse students from the scheduled time of the final exam except in the cases of an Incomplete.