

# Math 22b, Introduction to Calculus of Several Variables

Spring 2008

Venue: TBA

Time: MWTh 1-2, Block F, +Th 2-3.

Instructor: Bong Lian (*lian@-*, Goldsmith 314, X6-3069)

Office Hours: MW 2-3 or by appointment

I will use the course mailing list, *081math-22b-1@lists.brandeis.edu*, to communicate with you from time to time. You may send comments or questions that you think will be of general interest to the whole class. Do not reply a message sent to this list unless you want the whole class to receive your reply.

## Course Description

Textbook: *Calculus Two - Linear and Nonlinear Functions*, by Francis Flanigan and Jerry Kazdan, 2nd edition, Springer-Verlag, which should be available at the Brandeis bookstore.

All other course material including homework assignments and announcements will be posted on my web page <http://people.brandeis.edu/lian/math22b-S08/22b-S07.html>

Topics to be covered will include

Functions in several variables and their derivatives

Extrema problem for scalar-valued functions

Vector-valued functions and their approximations

Integration in  $\mathbf{R}^n$

Vector integrals and Stokes' theorem

Material on these topics will be drawn from Chapters 6-10 of the textbook.

Students are assumed to be proficient in the techniques in calculus of one variable.

They are also assumed to be thoroughly familiar with the topics in Chapters 1-3 (which were covered in Math 22a,) and somewhat familiar with those in Chapter 4, which we will review as necessary.

## Grading

Late homework will be accepted with a 25% penalty, up to one week after the due date. Homework more than one week late will not be accepted. Students who miss a test (or

exam) will not be granted a make-up test (or exam) unless there is a documented medical or other emergencies. Almost all homework problems will be drawn from the textbook.

Grades will be based on homework, two 1-hour quizzes (in class), and a final exam (scheduled by the registrar for this time block), weighted as follows:

Homework	30%	usually due on Wed
Quizzes	15% each	Thu Feb 28 and Thu Apr 10
Final Exam	40%	Mon May 5, 9:15 am –12:15 pm

### **Policies**

You may discuss the homework problems with other students in the class; however, if you do, you should write on your homework submission the students with whom you discussed the assignment. You do not need to mention any help you received from the TA or instructor. **You may not copy the written work of another student or allow another student to copy your written work. What you submit should be your own work.**

You should state the source of a mathematical fact you use when writing up your work, unless the fact you use is something you had learned earlier as part of your prerequisite for 22b. You can state the source by citing a theorem in the textbook, the page number of an exercise we have gone over in class or in a prior homework, or a fact we have proved in class.

**If you are a student with a documented disability on record at Brandeis University and wish to have a reasonable accommodation made for you in this class, please see me immediately.**

### **Advice**

I recommend the same strategy as before: Prepare before each class. That means you should read (carefully!) the sections to be covered *before* coming to class. Try the exercises in the book even though you may not be able to get them all. Having *thought through* the material by yourself makes it a lot easier for you to understand the lectures and ask questions in class. It is also a very economical way to learn mathematics. For every hour you spend preparing before class, the pay-off could be a saving of two to three hours after class.