Math 22B - Honors Linear Algebra and Multi-variable Calculus, Part II
Information for students, Spring 2017

Class meets at: Goldsmith 118, TTh 3:30-5:20 PM
Lecturer: Netanel Blaier, office: Goldsmith 208
Office hours: Thursday 2:30-3:30 PM
E-mail address: nblaizerzz@zzbrandezis.edu (remove the z’s)
Grader/TA: Mr. Aritro Pathak

Text: We will mostly follow chapters 4-10 in "Calculus Two, linear and non-linear functions", Second Edition., by F. J. Flanigan and J. L. Kazhdan. We will deviate a little from the written text, putting more emphasis on mathematical reasoning and rigorous definitions.

Learning Goals for Math 22b: Students in Math 22b will learn the $\epsilon$-$\delta$ definition of limit, continuity, differentiability in the context of single- and multi-variable calculus, while gaining confidence by performing computations using standard tools such as: Variable substitutions, Taylor’s, L’Hopital theorems etc; Study basic differential geometry (parametrized curves, tangents, velocity, speed and acceleration, arc length, curvature, oscillating plane); discuss directional, partial derivatives, the Hessian test, and the Lagrange multiplier method with applications to optimization. In the 2nd half of the semester, we will review the basic theory of integration (including: Darboux and Riemann definitions, improper integrals, iterated integrals) and vector calculus (including: Linear algebra of quadratic forms, cross product, line and surface integrals, Jacobians and coordinate changes; as well as Green, Stokes, and the divergence theorem) with applications.

4-Credit Course: Success in this 4 credit hour course is based on the expectation that students will spend a 10 hours (at least!) of study time per week in preparation for class (readings, homework, preparation for exams, etc.).

Grades: will be computed as follows:
The final exam and the midterm = 60%
Graded homework = 40%

Class participation is very important and would influence the division of grades between the midterm and final exam. Bonus points (for optional problems or exceptionally thoughtful analysis of tests/homework) will also affect the student’s performance.

The final exam would occur at the date announced by the register. The date of the midterm exam is TBA (and will be announced in advance).

Homework policy: Homework will be assigned once every one or two weeks and will be due the following week; the deadline for the first assignment is Thursday, 2/2.
Most of the homework problems will be drawn from the textbook. The workload is designed to be more than one student could reasonably be expected to do on his own every week. Students are *strongly encouraged* to work together on the homework problems and discuss them among themselves. Late homework will be accepted with a 25% penalty, up to one week after the due date and *before the solution has been posted*. After that, no late homework would be accepted.

Homework submitted more than one week late or after the solution has been posted will not be accepted. Students who miss an exam will not be granted a make-up test unless there is a documented medical or other emergencies.

**Policies:** As mentioned, you are expected to discuss the homework problems with your classmates; however, if you do, you should write on your homework submission the names of the classmates with whom you have discussed the assignment. You do not need to mention any help you have received from the instructor or the TA. You **may not** copy the written work of another student or from any other sources, 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. You can also freely use facts from Math 22a. Both the instructor and the TA are available during their weekly office hours or by appointments. Students are encouraged to seek help from them on any course related matter.

**Students with Disabilities:** 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 contact me as soon as possible.

**Academic Integrity:** You are expected to be familiar with, and to follow, the University policies on academic integrity. Please consult Brandeis University Rights and Responsibilities for all policies and procedures. All policies related to academic integrity apply to in-class and take home projects, assignments, exams, and quizzes. Students may only collaborate on assignments with my permission. Allegations of alleged academic dishonesty will be forwarded to the Director of Academic Integrity. Sanctions for academic dishonesty can include failing grades and/or suspension from the university.