Time: Tuesday, Friday 12:30–1:50 PM (Block J)
Room: 317 Goldsmith Hall
Instructor: Dmitry Kleinbock
    Room 207
    736–3059
    e-mail: kleinboc@brandeis.edu
Office Hours: TBA.

Course URL is [http://people.brandeis.edu/~kleinboc/20a/intro.html](http://people.brandeis.edu/~kleinboc/20a/intro.html).


The subject of this course is the study of functions of several variables, using the ideas of calculus. The phrase ‘several variables’ can refer to either independent or dependent variables, so we may be studying functions such as \( F(x, y, z) = (e^x \sin(y + z), xyz) \) and so on. We will be dealing with derivatives and integrals of such functions; the calculations are mostly done by methods that you learned in ordinary calculus. The organization and interpretation of those calculations is the new part. Much of that organization is guided by geometrical ideas, and so we will spend a fair amount of time on visualization and geometric interpretations of the formulas we derive.

The plan is, roughly, to cover the following chapters of the textbook:

- Vectors and the Geometry of Space (approx 1.5 week; Sections 9.1–9.4, 9.7)
- Curves and Surfaces (approx 2.5 weeks; Sections 9.5, 9.6, Chapter 10)
- Partial Derivatives (approx 3 weeks; Chapter 11)
- Multiple Integrals (approx 3 weeks; Chapter 12)
- Vector Calculus (approx 3 weeks; Chapter 13)

The heart of learning mathematics at this level is in problem-solving and homework, and there will be regular assignments. **Late homework will not be accepted.** Students who miss a quiz (or exam) will not be granted a make-up quiz (or exam) unless there is a documented medical or other emergencies.

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

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
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<tr>
<td>Quizzes</td>
<td>10%</td>
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<tr>
<td>Two midterm exams</td>
<td>20% each</td>
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<tr>
<td>Final Exam</td>
<td>40%</td>
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The first homework assignment, due January 24:

- Read Sections 9.1–9.3
- Problems 7, 8, 14, 24, 31 in Section 9.1 (for the last two, draw a picture of the region)
- 6ce, 10, 16, 17, 22 in Section 9.2
- 4, 7, 10 in Section 9.3 (there will be more from this section on the next assignment)

Homework policy: 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’s 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.

If you are a student who needs academic accommodations because of a documented disability, please contact me and present your letter of accommodation as soon as possible.

If you have questions about documenting a disability or requesting academic accommodations, you should contact Beth Rodgers-Kay in Academic Services (x6-3470 or brodgers@brandeis.edu.)

Letters of accommodation should be presented at the start of the semester to ensure provision of accommodations. Accommodations cannot be granted retroactively.

You are expected to follow the University’s policy on academic integrity, which is distributed annually as section 4 of the Rights and Responsibilities Handbook (see http://www.brandeis.edu/studentaffairs/srcs/rr/index.html). Instances of alleged dishonesty will be forwarded to the Department of Student Development and Conduct for possible referral to the Student Judicial System. Potential sanctions include failure in the course and suspension from the University. If you have any questions about how these policies apply to your conduct in this course, please ask.