Time and place
MoWeFr 12:00pm - 1:00pm in SR 138.

Instructor
Dr. Dmitri Kuzmin (phone: 713-743-3514, e-mail: kuzmin@math.uh.edu).

Office hours
634 PGH, We 2:00pm - 4:00pm, or by appointment.

Web page
http://math.uh.edu/~kuzmin/MATH3334.html

Recommended Text

Prerequisite
MATH 3333 (Intermediate Analysis).
Course description

This is a first course in the basic theory and analysis underlying \( n \)-dimensional calculus. The departmental syllabus covers the following topics (for details see http://www.math.uh.edu/Matweb/syllabi/3334/3334.html)

- Topology of \( \mathbb{R}^n \);
- Multivariable Differentiation;
- Multivariable Integration.

As the title indicates, we will be learning some more advanced vector calculus - calculus in several dimensions. We will be doing things as rigorously (in theorem-proof style) as time permits. Thus we will spend much of the course developing the theory behind the usual three-semester elementary calculus course which the student will have already taken. It is assumed that you have taken MATH 3333, so that you are familiar with proofs, abstract mathematical notation and reasoning, and that you are able to construct simple proofs yourself. The lectures will cover selected sections from the recommended text by Marsden and Tromba, as well as theorems and proofs from other sources. Therefore, it is important to come to every class and keep good classnotes.

Homework

Assigned and collected weekly. Homework problems and selected solutions will be posted on the web page. You should attempt as many problems as possible. As a rule, one problem will be graded at random each week. There will be up to 10 homework assignments with a total score of 100 points. Each problem will be graded as follows: full credit for a correct solution or serious attempt, half credit for a vague attempt, no credit for copied solutions.

Exams

There are three semester tests (worth 100 points each) and a final exam (worth 200 points). All tests will be based on the material covered in class, and on the homework. You can get an “A” without taking the Final if you have already earned 360 points or more. According to the UH academic
calendar, the date and time of the Final is May 7, 11am–2pm. The dates of the semester tests will be announced in class and on the web page.

There are no make-up exams. If you are late for a test and have a reasonable excuse, you must come to class and take the test. You will be given additional time to finish your work. If you miss one semester test and have a reasonable excuse, your final exam score will be multiplied by 1.5.

**Bonus points**

You can earn bonus points, e.g., for active class participation.

**Failure policy**

You automatically fail the course if at least one of the following is true:

- your total HW score is below 50 points, and at least one of the semester test scores is below 50 points;
- at least two semester test scores are below 50 points;
- the final exam score is below 100 points;
- the total score is below 250 points.

**Course grade**

The last day to withdraw with a “W” is April 6, 2010. If you do not drop the course by this date, you will receive a grade from “F” to “A” based on a maximum score of 600 points for the homework (100 points), three semester tests (100 points each), and the final exam (200 points). The lowest semester test score may be replaced by 1/2 of the final exam score if doing so will benefit the student. The approximate correspondence between the total score and the course grade is as follows:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>501 – 600</td>
<td>A</td>
</tr>
<tr>
<td>401 – 500</td>
<td>B</td>
</tr>
<tr>
<td>326 – 400</td>
<td>C</td>
</tr>
<tr>
<td>250 – 325</td>
<td>D</td>
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