# Mathematics 244

# Advanced Calculus II

# Spring, 2008

**Instructor: Bill Abikoff**

**Text: Fitzpatrick, Advanced Calculus, Second Edition**

**Meeting times: 12:30 to 1:45 TuTh in MSB 315 and 12 to 12:50 F in MSB 211.**

**The course is the second in a theory-oriented sequence giving an introduction to calculus (from an advanced point of view), differential equations and linear algebra. The sequence provides a sound foundation for further study in mathematics, statistics and theoretical science and engineering. The course will have projects which complement the class material.**

**The course is directed at students who have demonstrated an aptitude for mathematics and are willing to work hard to further both their skills and a deeper understanding of rigorous, conceptual thinking.**

**Permission of the instructor is required for anyone who has not taken Math 243.**

**The sequence provides an organized introduction to the ideas of the subjects and reasoning with their ideas and concepts. You'll work hard but I'm there to back you up.**

**Since the course is being given only for the second time, I think it might be useful to make available some further information about the course. Additional description is available in the Honors Program listing for the course (click here); a more informal description is given when you click here.**

**You might also find it interesting to compare this course with the MIT undergraduate courses on calculus from a theoretical viewpoint. Look at the OpenCourseWare project at MIT:**

http://ocw.mit.edu/OcwWeb/Mathematics/index.htm
**Their course numbers are 18.014 and 18.02. They chose to use a forty year old, but classic, text. The one we use is very recent; however, courses at this level rarely follow the text closely.**

**I often follow the questions asked by the class rather than my own notes --- so you should try to take good notes and I encourage you to share them.**

**My e-mail address is abikoff@math.uconn.edu . Clicking on the address should give you a pop-up mailer window. My homepage is http://www.math.uconn.edu/~abikoff.**
**I will always be available, as often and as soon as needed, by appointment. e-mail is the most reliable means of contacting me.**

**Lists of homework assignments, projects and other information for students are given as given as hypertext links below. The lists are works in progress.**

Homework

Projects **are available here.**

New and important **is a place where I'll put items as needed.**

# Math 244 Homework Assignments
# Tentative List

The following exercises may be found in the text. Exercises from the backup text are given by B-x where B means backup and x is the page number.

| Section | Problems |
|---|---|
| 5.2 | 1b,2,3,4,11,12, what does problem 12 have to do with bank accounts? |
| 5.3 | 1,4(be careful),7,10,14,15 |
| 6.1 | 1b,c,2,3,4,5,6,7 |
| 6.2 | 1,2,3,4b,6a,b,7,8,11,12 |
| 6.3 | 1,2,3,6 |
| 6.4 | 1,3,4,5,6,9 |
| 6.5 | 1,2b,4,6 |
| 6.6 | 1a,2,6,7,8,9,11 |
| 7.1 | 1,2,4,5,6 |
| 7.2 | 1a,b,2,3,4,8,9 |
| read p. 180-182 | |
| 7.3 | 5,6,8,10 |
| 7.4 | 1,4,5,6 |
| 8.1 p.202 | 2a,d,3,4,5,6 |
| 8.2 p.207 | 1,3,4,5,9 |
| 8.3 p.211 | 1,3,5 |
| 8.4 p.215 | 1,2,3 |
| 8.5 p.220 | 2,3,7,8,9 |

| | |
|---|---|
| 8.6 p.223 | 1,2,3 |
| 8.7 p.226 | 3,4,5,8 |
| 9.1 p.239 | 1b,d,f,6 |
| 9.2 p.244 | 1,2,3,5,6 |
| 9.3 p.249 | 1,2,3,6,7 |
| 9.4 p.254 | 2,3,4,5 |
| 9.5 p.262 | 1a,b,2,3,4 |
| Alternate Text p. 451 | 1,5,10,15,20,21,22 |
| p.276 | 1,3,4,5,6 |
| 12.1 p.321 | 1,2,3,4,5 |