Math 425.1: Advanced Calculus
Spring 2007: Mondays & Wednesdays, 12:45–2:00, LGRT 119

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office hours: Mondays, Tuesdays & Wednesdays at noon (by appointment)

The text, *Calculus on Manifolds* by Michael Spivak, is a classic (though a bit terse and formal). It emphasizes the geometric aspects of advanced calculus, using the language of linear algebra and diffential forms. We shall cover most the topics (and then some), culminating in the integral theorems which generalize the fundamental theorem of calculus, and which are ubiquitous in science and engineering.

Students need a good understanding of multi-variable calculus (Math 233), linear algebra (Math 235), and some basic notions about logic, sets and topology (Math 300) before undertaking this course.

On my website (www.gang.umass.edu/~kusner/class/425hw) you can find the schedule of topics (updated weekly), free hints and advice, or what homework is due when.

Class attendance is expected. Besides the value of class participation, there will be a few in-class quizzes from time to time you won't want to miss!

There also will be a mid-term exam, which will cover material through chapter 3, just before spring break (...). In May there will be a comprehensive final exam (...).

Meeting deadlines is essential. Homework will be assigned in class and from the text. It will normally be collected on Mondays. No late homework will be accepted, and there are no "make-up" quizzes, but a small portion of the homework and quiz scores will be disregarded, so a student need not panic about missing an assignment here or there.

Absence from an exam (mid-term or final) is not excusable except under extreme circumstances; such absence makes life difficult for everyone.

Grading will be based in equal parts on the homework and quizzes, on the mid-term exam, and on the final exam.