Course Overview: The main goals of this course are to deepen your understanding of calculus, including proofs of the major results, and to explore role of calculus in elementary abstract mathematics. This course builds on previous calculus courses, and depends on students’ having a firm grasp of single-variable and multi-variable calculus at the level of Math 113, Math 114, and Math 213. Students are expected to master calculations and proofs, as well as use the resulting theorems to reason about calculus.

Text: Advanced Calculus: A Friendly Approach by Kosmala (Prentice-Hall). We will cover roughly Chapters 1-7.

Class Times: Tuesday and Thursday, 4:30-5:45 in Science and Tech I, Room 242.

Contacting the Professor: I will hold office hours Tuesday and Thursday, 3:30-4:30 in Science and Tech I, Room 222B, and by appointment. You can reach me by email at rgoldin@gmu.edu, or by phone at 993-1480.

Web Page: There will be a web page for the course at math.gmu.edu/~rgoldin/315. Here I will post problem sets, information, some solutions, etc. I will not bring photocopies of materials to class that are posted on the website, however I will make announcements in class when there is something useful to be found there.

Grading: Grading will be based on a mixture of graded homework, exams, and a final. There will be one mid-term exam worth 20%, one final exam worth 30%, and a series of collected problems throughout the semester, worth 50%. Problem sets are graded based on your writing skills and presentation in addition to the correctness of the mathematics. Over the semester, there will be several discussions on “what makes a good proof”. You may work together on problem sets, but there are two conditions:
(1) You must indicate on the top of the page with whom you worked and/or discussed the set, and
(2) You must write up your own problem set.

If I suspect copying, you will either be given a 0 or asked to defend your work orally. No grades (on problem sets or exams) will be dropped. No make-up exams will be offered except in extreme circumstances. No late problem sets will be accepted under any circumstances. If you cannot attend class when a problem set is due, you may FedEx the problem set to me (be sure to send it by the due-date) at Mathematical Sciences MS3F2, 4400 University Ave., Fairfax, VA 22030. I will not accept problem sets mailed normally, and you will get no credit for problem sets “lost in the mail”.

Attendance: While class participation or attendance is not an official part of the grade, I will use this to adjust your grade (up or down) in borderline situations. In addition, it will be very hard to do well in the course without attending, as we will sometimes veer from the text. If you cannot attend class regularly due to a work or personal situation, I recommend you take this course another semester.

Important Dates: The drop date for this course in September 27. If you have a doubt about whether you should drop or not, please feel free to talk to me about it. There is no class on October 15 nor on November 28. The last day of class is Dec. 5. Perhaps more importantly, the Midterm Exam is tentatively on Thursday, Oct. 10 and the Final Exam is (definitely) December 10, 4:30-7:15.