Math 3100, Spring 2014

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texts We will use two different texts:

1. David Applebaum, *Limits, limits, everywhere: the tools of mathematical analysis.* Oxford U. Press 2012. Available at amazon.com (a direct link is available on the course webpage). **Please be sure to obtain a copy by Monday, January 20.**

2. Malcolm Adams, *Sequences and series.* Pdf available (free) at http://www.math.uga.edu/undergraduate/3100deptsyl.html (this link is also on the course webpage).

We intend to cover material equivalent to the entirety of Dr. Adams's notes. The order of topics, however, will for the most part follow Applebaum's book.

course contents The core of the course is the idea of **approximation**. It goes without saying that this idea is absolutely central in mathematics and science. Paradoxically, it is possible to think about approximation in a completely precise and mathematically rigorous way, and this will be our main business in this course.

More broadly, the course is designed to help you make the transition from the mathematics of calculation to the mathematics of concepts, so most of your written work will be **proofs**. You could think of a proof as a kind of essay in which you establish the truth of some mathematical statement. Because the subject is mathematics and not something like history or art appreciation, it is possible to do this in a completely airtight and irrefutable way. On the other hand, just as in written work in those subjects a proof must be composed in a literate and logical way, and will improve under editing and revision.

It turns out that a good understanding of mathematics from this more conceptual viewpoint is an enormous aid in learning and applying mathematics even when you only want to calculate something. I hope that this course will assist you to appreciate this.

grades will be based on homework, exams and class participation. There will be three **midterm exams** and a cumulative **final exam**, as well as **homework** due every week on Wednesday. Their contribution to your final grade will be

homework	15%
midterm exams	45%
final exam	30%
participation and effort	10%

important dates

withdrawal deadline Thursday, March 20

midterm exams (tentatively)

I. Friday, February 7

II. Friday, March 7

III. Friday, April 18

final exam Friday, May 2, 8 am–11 am in our regular classroom

homework I intend to have homework assignments due every week on Wednesdays. You are permitted to work with others on all homework assignments, **but the paper you submit must be written by you alone and must reflect your own understanding.** I may at my discretion choose to follow up any written assignment by an oral quiz.

academic honesty You must follow UGA policy with regard to academic honesty. Prohibited conduct includes plagiarism, unauthorized assistance, lying/tampering, and theft. If you have any questions about what is or is not permitted on any particular exam or assignment, please contact me. For general questions about UGA policy please refer to http://www.uga.edu/honesty/

first assignment, due Wednesday January 8: write a paragraph describing your academic background and goals, and list your previous math courses at the university level.