

**MATH 320, Section 2: Analysis I**  
Spring 2009 MWF 12:40 - 1:30 pm C306 Wells Hall

**Instructor Information:**

Lawrence Roberts  
A345 Wells Hall  
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**Tentative Office Hours:**

M 10:00 - 11:00 am  
W 1:30 - 2:30 pm  
F 2:00 - 3:00 pm

**Book:** *Understanding Analysis*, S. Abbott. This book is mandatory for the class.

**Course Website:** [www.math.msu.edu/~lawrence/math320.html](http://www.math.msu.edu/~lawrence/math320.html), or use the “course website” link on the math homepage: [www.math.msu.edu](http://www.math.msu.edu)

**Aims:** 1) To develop a good understanding of why calculus works the way it does, and 2) to further one’s understanding and ability of writing and reading proofs.

**Material Covered:** We will give a rigorous account of the foundations of calculus, including at least the following topics: the real numbers and completeness, convergence of sequences and series, limits and continuity, types of limits, uniform continuity, and derivatives. This roughly corresponds to chapters 1-5 of Abbott. Time permitting, we will also discuss integrals (but we probably won’t have time to say that much). Ideally, we would complete a proof of the fundamental theorem of calculus. In addition, we will talk extensively about proofs and how they work.

**Grading:** The final will count 40%. The only midterm will count 25%. The homework will count for 25% (see below). Consistent attendance (i.e. > 90%) and class participation will ensure the remaining 10%. Students are responsible for any information stated in class during their absence. While I will try to keep the website up to date, the *lecture* is the official source of all information for the class. Missing the mid-term, with a legitimate excuse (i.e. a doctor’s note for a severe illness), will result in the final being counted in its place. So, make every effort to take the mid-term!!! Missing the final will automatically result in a 0.0 for the class. Except in extreme circumstances there will be no incompletes.

**Scale:** (85,100] → 4.0, (77,85] → 3.5, (70, 77] → 3.0, (65, 70] → 2.5, (60, 65] → 2.0, (50, 60] → 1.0, [0,50] → 0.0

**Homework:** Each day there will be an assigned reading which must be performed before class. Homework problems will be assigned during each week and collected on the following Wednesday. Time will be made available to discuss the homework in class. I will randomly grade some of the homework each week. The homework (and the tests!) will consist largely of proofs, and your grade will depend upon both the *correctness* and *clarity* of your argument. As such, penmanship is important. I will not grade work that I deem illegible.

**Academic Responsibility:** All students are expected to do their own work. Cheating, plagiarism, etc. will be handled according to the university policies on academic dishonesty.

**Important Dates:**

January 12	Classes begin
January 16	Last day to change grading option/add a class
January 19	Martin Luther King, Jr. Day – NO CLASS!
January 23	Last day for late adds, switching sections, etc.
February 6	End of tuition refund period
March 4	MID-TERM
March 9-13	Spring Break
May 1	Classes end
Tuesday, May 5	FINAL EXAM in C306 Wells Hall, 12:45 - 2:45 pm