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Fall 2013
Math 471 Advanced Analysis 1
Bouillon 101, 12:00 - 12:50 MWF

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Required Text: Ross, Kenneth A.; <u>Elementary Analysis: The Theory of Calculus</u>, 2nd edition, published by Springer-Verlag
Course Goals: The goal of Math 471 is to approach calculus rigorously. For example, we want to give a proof of the Intermediate Value Theorem that doesn't rely on a picture. (The picture may inform our thinking, but we don't want to appeal to it.) A major part of that goal is learning how to read proofs **AND** learning to write your own proofs. In terms of sections of the book, we will start with Section 1.7, and get to Chapter 7. This means our list of topics will include:

1. Number systems (naturals, integers, rationals, reals and complexes) (However, we won't build the real numbers up from scratch!)

2. Sequences

3. A little point-set topology

4. Continuity

1 Grades/Exams/Homework

- Grades

  Grades will be calculated using the following weighting system:
  Homework: 50%;
  Exams: 50% total, broken up as follows: 25% for the mid-term and 25% for the final.

- Homework

  You'll get a homework assignment every Wednesday (except the first week!) which will be due on the Thursday of the following week. (So, your first homework will be due October 3.) You may use/ask/talk to whatever/whoever you'd like, as long as you say what resources you used. However, you must write your solutions up in **your own words** to hand in. **DO NOT** wait until the day before homework is due to start working on it. There won't be a large number of problems, but you will need spend a fair bit of time thinking about the problems!

- Exams

  There will be two exams: a mid-term and a final. They will be take-home exams, and you'll have a week to work on them. In contrast to the homework, I want you to work by yourself on the exams. The mid-term will be handed towards the end of October, and the Final Exam will be handed out on December 4 and due on December 12.

- Expectation for Homework and Exams

  Your homework and exams should be written up neatly and legibly, using complete sentences where appropriate. (For example, I don't expect you to write

$(a + b)^2 = a^2 + 2ab + b^2$ using complete sentences!) Part of writing proofs is to use correct and proper grammar, spelling, and punctuation. As a result, you will be graded on mechanics, as well as the correctness of your proofs!

2 Legalese/Fine Print

Students with disabilities who wish to set up academic adjustments in this class should give me a copy of their "Confirmation of Eligibility for Academic Adjustments" from the Disability Support Services Office as soon as possible so we can discuss how the approved adjustments will be implemented in this class. Students without this form should contact the Disability Support Services Office, Bouillon 205 or dssrecept@cwu.edu or 963-2171.