

Fall 2009
Math 471
Advanced Analysis
Bouillon 106, 2:00 - 3:30 TTh

Instructor: Dr. Jim Bisgard

Office: Bouillon 118

Phone: 963-2823

E-mail: bisgardj@cwu.edu

Office Hours: M-F 10:00 - 10:50, TTh 1:00 - 1:50, and by appointment.

Required Text: Ross, Kenneth A.; Elementary Analysis: The Theory of Calculus ; 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. Different sizes of infinity (countable vs. uncountable)
3. Sequences
4. A little point-set topology
5. 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 Tuesday (except the first week!) which will be due on the Wednesday of the following week. 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 they will take some time to do!

- 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 1 and due on December 10.

- 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!)

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 dssreceipt@cwu.edu or 963-2171.

3 H1N1 Problems

If you feel that you have the flu, please do not come to class. Instead, notify Student Health (by phone or email) and me (by phone or email). I will have homework available on the web, and you are always welcome to turn homework in by email.