Instructor: Dr. Jim Bisgard
Office: Bouillon 118
Phone: 963-2823
E-mail: bisgardj@cwu.edu
Office Hours: MW 1:00 - 1:50, TTh 10:00 - 10:50, and by appointment.

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. Functions and Sets

2. Different sizes of infinity (countable vs. uncountable)

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

4. Sequences and Series

5. Topology of the line

6. Continuity

7. Differentiation

Required Text: Krantz, Steven G.; <u>Real Analysis and Foundations</u> 2nd ed.; CRC Press

1 Grades/Exams/Homework

- Grades

  Grades will be calculated using the following weighting system:
  Homework: 50%;
  Exams: 40% total, broken up as follows: 20% for the mid-term and 20% for the final;
  Class Participation: 10%

- Homework

  You'll get a homework assignment every week, and you will have a week to work on it. You may use/ask/talk to whatever/whoever you'd like, as long as you say what resources you used. In addition, write your solutions up in **your own words** to hand in.

- 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 out on October 24 and due on October 31, and the Final Exam will be handed out on November 27 and due on December 4.

- Class Participation

  Every other Friday (or possibly every Friday), students in class will present their solutions of homework problems. To receive the 10% class participation, you will need to present at least two homework problem solutions to the class. For any problem you present, please bring copies of your solution to distribute to the class.

- 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 Important Dates

September 25 - Last Day for Add/Drop
October 31 - mid-term exam due
November 2 - uncontested withdrawal deadline
December 4 - final exam due

3 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.