Winter 2015
Math 499S
Bouillon 106, 12:00 - 12:50 TTh

Instructor: Dr. Jim Bisgard   **Office:** Bouillon 118
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Webpage: http://www.cwu.edu/∼bisgardj **Office Hours:** M-F 11:00-12:00
                                                    and by appointment.

Course Goals: The goal of this class is to give you an opportunity to assemble a portfolio demonstrating various types of proofs, as well as to reflect on what you have learned as a Mathematics Major. In addition, you will read a mathematical article and prepare a written and oral summary.

Grading: You will be required to complete the following assignments:

- Complete a portfolio demonstrating a non-trivial example of each of the following types of proof: (20%)

    1. Direct Proof
    2. Contrapositive Proof
    3. Proof by Contradiction
    4. Proof by Cases
    5. Proof by Mathematical Induction

- A 3-5 page paper on "An Application of Mathematics" (20%).

  The application should be at the calculus level or higher, and may come from any area of mathematics. As you look for a topic, I suggest that you talk to faculty, either in the math department or in another department!

- A 3-5 page paper on "What is Mathematics?" (20%)

- A paper summarizing a mathematical article (15%)

  A good place to begin looking for an article is the mathematics faculty and mathscinet!

- A presentation summarizing a mathematical article (15%)

- Class Participation (10%) (being in class and writing a one-paragraph summary for each speaker)

Deadlines

- The portfolio must be completed by March 18 by 4 pm.

- The application paper has the following due dates (at beginning of class):

      Topic: January 15
      Draft: February 5
      Final Draft: February 19

- The "What is Math?" paper has the following due dates (at beginning of class):

      Draft: February 26
      Final Draft: March 12

- The article summary paper has the following due dates (at beginning of class):

    Choice of article: February 3

    Draft: February 17

    Final Draft: March 10

- The presentations on the articles will occur on the last four class days, so you should be prepared to present beginning March 3.

You must send your entire portfolio (including the proofs, the application paper, the "What is Math?" paper, and your article summary paper) in a single email no later than 4 pm on March 18.

Speakers and Participation: We will try to have a speaker every week, typically on Thursdays. Attendance for these talks is mandatory, and you are expected to type a one-paragraph summary of each talk. This summary is due at the beginning of the following class. In preparation for your presentations, you should also write down two things that you liked about the talk, and two things you didn't like about each talk. Your participation grade is based on attendance at these talks, as well as your one-paragraph summary!

Disability Support:
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.