

MATH 499S: Senior Seminar
Dr. Boersma
Winter 2019

Goals: This seminar is a capstone experience for mathematics majors. The primary goals are: 1) To assemble a portfolio demonstrating your proficiency in proof writing; 2) To learn about and discover a variety of applications of mathematics; 3) To read and summarize a recent mathematical paper; 4) To reflect on the mathematics you have learned; and 5) To continue to improve your mathematical communication skills.

Office: Samuelson 221-A, phone: 963-1395, email Stuart.Boersma@cwu.edu. Office hours will be announced in class shortly. You may of course drop by anytime. If I'm not busy I'll be glad to talk with you.

Your Grade: There will be a variety of assignments in this course, grouped into five main categories. The categories will be weighted as follows:

Proof Portfolio	20%
Applications of Mathematics	20%
Article Summary	25%
The Nature of Mathematics	20%
Preparing for Class/Participation	15%

While I reserve the right to “curve” final grades as I deem appropriate, your grade will be no lower than:

A :100 – 93%	C+:79 – 77%
A-: 92 – 90%	C: 76 – 73%
B+:89 – 87%	C-: 72 – 70%
B :86 – 83%	D+: 69 – 67%
B-: 82 – 80%	D : 66 - 63%
	D- : 62 – 60%

While I will try to keep all grades in Canvas, the grade reported by Canvas may or may not accurately reflect the above grading scheme. The above grading scheme takes precedence over any totals reported by Canvas. As a mathematics major, you should be able to figure this out.

Proof

Portfolio: Complete a portfolio demonstrating non-trivial examples of proofs you have written. The portfolio must contain a proof of each of the following types:

- Direct proof
- Proof by contrapositive
- Proof by contradiction
- Proof by cases
- Proof by mathematical induction

Please see Canvas for more details and deadlines.

Applications of

Mathematics: You will write two short papers, each on a different application of mathematics. Please see Canvas for more details and deadlines.

Article

Summary: You will read a recent mathematical paper and 1) write a 3-5 page summary and 2) deliver a 10 minute presentation. Please see Canvas for more details and deadlines.

The Nature of

Mathematics We will have a variety of discussions related to this topic. You will be required to participate in these discussions and complete any of the related assignments. Please see Canvas for more details.

Preparation and

Participation There will be a variety of assignments you will need to complete in order to prepare for the day's discussions and activities. Additionally, attendance is required. Every absence, starting with your second, will result in a one point deduction in your grade in this portion of the course.

Students who have special needs or disabilities that may affect their ability to access information or material presented in this course are encouraged to contact me or the Center for Disability Services.