

MATH 499S: SENIOR SEMINAR. Winter, 2017

Course Summary

The goal of this class is to give you an opportunity to reflect on what you have learned as a Mathematics Major while assembling a portfolio demonstrating various types of mathematical work including constructing proofs, communicating mathematics, and individually learning new mathematics by reading a mathematical article and prepare a written and oral summary.

In addition, in this class we will reinforce the department's learning objectives of:

- Applying appropriate technology to solve problems;
- Working cooperatively with others;
- Problem solving skills,
 - Describe the methods used to approach a problem;
 - Read and understand complex mathematical problems;
 - Model phenomena mathematically;
- How to express solutions in written and oral form.
 - How to “speak math”, and
 - How to use logic to justify mathematical ideas,

Course Components

Class Meeting Time

Tuesday 12:00-12:50 PM Black Hall 134
Thursday 12:00-12:50 PM Black Hall 134

Question/Answer Office Hours

MTWTh 2:00-3:00pm Bouillon 107A

Office Hours may be changed to meet the needs of the class. Additional office hours are available via appointment, please email the instructor to schedule these meetings.

Website: Course materials will be posted and collected via Canvas.

Contact Information

Instructor: Brandy Wiegers, PhD
Email: brandy.wiegers@cwu.edu
Office: Bouillon 107A
Phone: (509) 963-2163
Website: <http://www.cwu.edu/math/dr-brandy-wiegers>

The best way to contact the instructor is at office hours or via email. Expect a 12-24 hour delay in response. If you haven't received a response within 24 hours of the original email please contact the professor again.

Syllabus Changes: I reserve the right to change the policies contained in this syllabus as dictated.

Grading

The following table reflects the planned letter grade for the course structure:

Total Score	100-93	92-90	89-87	86-83	82-80	79-77	76-73	72-70	69-67	66-63	62-60	59-0
Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

Final grades will be computed by assigning weights to the categories described below:

Category	Percentage of final grade
Class Participation and in-class work	10%
Mathematics Proof Portfolio	20%
“What is Mathematics?” Paper	20%
“An Application of Mathematics” Paper	20%
Summarizing a mathematical article Paper	15%
Presentation	15%

More details about each item are on the next page. The grading rubric for each of these items will be available via Canvas.

Assignment Due Dates

There will be regular in-class work and homework to support the creation of your mathematical portfolio. This will be assigned in a timely manner to support the following due dates for project components:

Item	Topic Due	Draft Due	Final Paper Due	Grading Reflection Due
Summary of Article	Jan 17	Jan 26	Feb 9	Feb 21
An Application of Mathematics	Jan 26	Feb 9	Feb 23	Mar 7
What is Mathematics?		Mar 2	Mar 9	
Final Presentation	Feb 16		Mar 2	

Incomplete work will NOT be accepted for credit. In order to receive full credit for an assignment, it MUST be completed and turned in by class time on the specified due date. Any assignment turned in late, but on or before the following class period will receive a maximum of one-half credit. Any assignment turned in after this date will not be graded and no credit will be given for it.

Assignment Format

To meet the learning objective of technical writing, each of the assignments should communicate the fundamental ideas in clear, concise, descriptive English prose.

Collaboration

You are encouraged to talk to classmates about your assignments and other problems from classwork but you must complete all assignments by yourself. If you do talk with others please indicate who your group members were on your assignment.

Please be reminded that the Washington State Legislature defines Academic Dishonesty, <http://app.leg.wa.gov/WAC/default.aspx?cite=106-120-027>

Assessment Categories

In-Class Work and other Assignments

Attendance will be taken and homework will be assigned regularly to be turned in at the beginning of class. No late homework will be accepted without a university accepted excuse note. This work will support the creation of your mathematical portfolio:

By the end of the quarter, one portfolio will be submitted with your three papers and five proofs. This is due the day of the final. You must complete all the portfolio requirements to graduate with your mathematics degree. The Portfolio will include:

I. Paper: What is Mathematics?

3-5 page paper on what is mathematics. We will be doing regular assignments to support the essay over the quarter. The final paper should be the introduction to your math portfolio.

II. Proofs

Will be created with a sampling of proofs you have done in your mathematics courses. The complete portfolio will include non-trivial example of each of the following types of proof:

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

Procedure: Choose a proof that represents a particular proof technique. Rewrite this proof, correcting, of course, any mathematical errors and clean up any faults in diction and clarity. Type it with your name in the upper right hand corner and two spaces below, **put the proof technique (in bold)** that you are illustrating. You will submit to me one such proof each week beginning Thursday, January 26. Feel free to start submitting these early. It is possible that I may ask you to rewrite your proof.

III. Paper: Summarizing a Math Article

A 3-5 page paper summarizing a mathematical article.

IV. Paper: Mathematical Applications

Your 3-5 page paper should present either a single application of mathematics at or above the calculus level. You can choose an application that you learned in one of your courses, as part of an REU, as part of an independent study, or something you picked up anywhere else. You should include background information about the application so that a mathematical reader can follow the paper. You should also provide some mathematical content. You should check whether your topic is appropriate with the instructor prior to writing the paper. You should also consult with the instructor to insure that you include enough mathematical material.

V. Presentation

You will also prepare a presentation summarizing a mathematical article or summarizing a mathematical application.

University Policies

Religious Holidays: Reasonable accommodations will be made for you to observe religious, holidays when such observances require you to be absent from class activities. It is your responsibility to inform the instructor during the first two weeks of class, in writing, about such holidays.

Academic Integrity: While completing this course you must follow the CWU Student Code of Conduct which is defined by Washington State. Please be reminded that the Washington State Legislature defines Academic Dishonesty in all its forms including, but not limited to the following:

- Cheating on tests.
- Copying from another students test paper.
- Using materials during a test not authorized by the person giving the test.
- Collaboration with any other person during a test without authority.
- Knowingly obtaining, using, buying, selling, transporting, or soliciting in whole or in part the contents of an unadministered test or information about an unadministered test.
- Bribing any other person to obtain an unadministered test or information about an unadministered test.
- Substitution for another student or permitting any other person to substitute for oneself to take a test.
- “Plagiarism which shall mean the appropriation of any other persons work and the unacknowledged incorporation of that work in ones own work offered for credit.
- “Collusion which shall mean the unauthorized collaboration with any other person in preparing work offered for credit.

For more details visit: <http://app.leg.wa.gov/WAC/default.aspx?cite=106-120-027>

Support Services/ Accommodations: Central Washington University is committed to creating a learning environment that meets the needs of its diverse student body. If you anticipate or experience any barriers to learning, discuss your concerns with me. Students with disabilities should contact Disability Services to discuss a range of options to removing barriers, including accommodations. Student Disability Services is located in Hogue 126. Call (509) 963-2214 or email ds@cwu.edu for more information. Also, please let me know if you need me to accommodate for a disability in anyway, I am glad to do so!

Incompletes: The College Policy on Incompletes states that Incompletes are used when the student was not able to complete the course by the end of the term, but has satisfactorily completed a sufficient portion of it and can be expected to finish without having to re-enroll in it. In this course, students who have not completed substantial coursework should not assume that they will be given an incomplete at the end of the semester. If you have concerns about this you should talk to the course instructor and your academic advisor.

Summary of Important Dates: See <https://www.cwu.edu/calendar> to verify any dates

Jan 10	Change of Schedule Period Ends (Add/Drop classes) <i>(Drops completed prior to this date or by the close of business on this date will not appear on transcripts or have tuition assessed).</i>
Jan 10	Deadline to declare audit & credit/no credit grading.
Jan 16	Martin Luther King Jr. Holiday, No class will be held.
Feb 2	Deadline for 50% refund with complete withdrawal
Feb 20	President’s Day Holiday, No class will be held.
Feb 17	Uncontested withdrawal period deadline
Mar 10	Withdrawal from classes or university. <i>Not permitted except for “serious and compelling reasons.”</i>