

Course Information
Math 491: Mathematical Writing - Section 01, Spring 2019
3 Credits: MWF 8:00 - 8:50am MacLean Room 273

Textbook: Mathematical Writing, notes by Walter Sizer (rev 2010).

Instructor: Justin James, Mathematics Department

Office: MacLean 375M

Office Hours: MWF 11:00am – 12:00pm

MTWTh 1:00pm – 2:00pm

Other times by Appointment

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Course Description:

This is a writing intensive and capstone research course in Mathematics. It is intended to teach students how to research a mathematical topic and produce a written report on their research that is sufficiently deep, respects audience, and maintains clarity.

Prerequisite: MATH 291: LaTeX (Writing Assignments for this course should be typeset using LaTeX)

Course Requirements:

You must complete all writing assignments in a satisfactory manner (including preliminary drafts and a bibliography, when appropriate). Unsatisfactory papers must continue to be revised until they are deemed satisfactory. You are also required to give feedback on drafts of papers submitted by your peers.

Major Content Areas:

- Mathematical Research.
- Learn good form for mathematical papers and reports.
- Recognizing good mathematical exposition.

Learning Outcomes (General):

- Learn good form for mathematical papers and reports.
- Experience researching a mathematical concept in depth.
- Experience with long and short form mathematical exposition.

Instructional Strategies:

In class activities, group activities, small group and class discussions, formal writing assignments, informal journals, peer revision of drafts of writing assignments

Attendance and Academic Expectations:

You are expected to attend class regularly and on time. You are expected to participate in activities and discussions during class time. Assignments that are turned in late or that are significantly below acceptable standards will be penalized (at least) one letter grade even after successful revision (I will give you one “free” rewrite this semester, but this cannot be used for your final paper). Papers that require more than one round of revision to reach an acceptable standard will be penalized for each additional round of required revision.

Objectives: This course will develop the following written communication competencies:

- Use a coherent writing process including invention, organization, drafting, revision, and editing to form an effective final written product.
- Consult effectively and appropriately with others to produce quality written products.
- Locate, use, and cite appropriately primary and secondary course materials from both print and electronic resources.
- Create logical, engaging, effective written products appropriate for specific audiences and purposes.
- Use correct grammar and mechanics in writing.

Journals and Notebooks: You will be expected to create a course notebook where you keep a written record of key principles relating to the writing of mathematical and technical papers. Your notes should include both the content covered in class and content drawn from reading assignments. I will collect and grade your notebooks a few times during the semester to make sure that you are keeping up on this practice. You will be reminded at least one class period in advance. I will also assign a few short (informal) journal writing assignments during the course. Your notebook and journals will be graded as either **satisfactory or unsatisfactory**.

Writing Assignments (These are initial descriptions – I will give more detailed assignment expectations later):

Assignment #1:

Write a 2 – 3 page (informal) letter to your long-lost Aunt Syzygy describing something you are passionate about. **(5% of your course grade)**

Assignment #2:

Select and read a section of a textbook of your choosing (at a level of Calculus I or higher). Write a paper discussing its mathematical exposition, noting what is good, what is poor, and what could be improved (and how). Avoid merely summarizing content from the section. Your focus should be on how and how well the content is presented. **(5% of your course grade)**

Assignment #3:

Write a second letter to your Aunt Syzygy about a mathematical topic that you really love and enjoy. Describe the topic in as much detail as you can, including what you currently know and what you would like to learn more about. You may assume Aunt Syzygy has an undergraduate education in mathematics. **(5% of your course grade)**

Assignment #4:

You will be given a rough draft of an article on a mathematical topic. You are expected to play the role of an editor and recommend revisions. We will spend some class time going through a portion of the paper together. You will complete the process and then turn in all of your suggested revisions. **(5% of your course grade)**

Assignment #5:

You will be given an article to read about a mathematical topic. You are expected to read the article and write about your thinking process while you are reading. Your paper should focus on *how you experience reading the paper* (a summary of the content of the paper is not acceptable). Describe any difficulties you have with the act of reading, any questions you have, what you would like to know more about, and how you think about the topic in the paper. **(5% of your course grade)**

Assignment #6:

Using the article from Assignment #5, write a one-page polished summary of the mathematical content of the article. Your paper should be written for a reader who is already familiar with the subject matter but not familiar with the particular text. Your focus should be on clearly communicating the content covered in the article (not on critiquing the quality or clarity of the source material). **(5% of your course grade)**

Assignment #7:

Write a short (~2 page) paper on a mathematical topic (simpler than the one from Assignments #5 and #6). You should focus on clear exposition of the topic and on incorporating mathematical symbols in the text of your paper. **(5% of your course grade)**

Assignment #8:

Read an article on a topic that you are considering for your final paper and write a 2 - 3 page paper with two parts. The first part should be a summary of the content of the paper. The second part should be your thoughts on this topic (questions you have or problems and ideas to investigate further that arise from the paper). **(5% of your course grade)**

Assignment #9:

Select a mathematical topic (one you are considering for your final paper) and write a brief (1-2 page) summary of the topic. In addition, your paper must also provide *at least five* detailed bibliographic references (including both printed and electronic sources), and including page number (if appropriate). **(5% of your course grade)**

Assignment #10:

Pick a mathematical topic (hopefully you will all use the topic that you developed through Assignments #3, #8, and #9). Write an (approximately) 12-page paper describing and exploring the topic in detail. Your audience is your current classmates (you may assume a grasp of the basic concepts and principles involved). A preliminary draft must be submitted several days in advance of the final due date. This draft will be read by your class members and the instructor. You will receive feedback that you should use to revise your draft and create a polished final product. **(Final draft of papers: 45% of course grade. Participation in giving feedback on your classmates' papers: 5% of your course grade).**

Other Activities and Assignments:

Attendance, participation in class activities, class discussions, and completing journal assignment and notebook checks is required and will contribute the remaining **5% of your course grade**.

Due Dates: Due dates for all journals, notebook checks, and writing assignments are as indicated in the Course Schedule Handout. Unless there is an unforeseen emergency and/or we make alternative arrangements, expect significant late penalties if these deadlines are not met. Please note that first drafts of Assignment #10 will be due a few days before we discuss them and give you draft feedback in class (sometime between April 26th and May 3rd). Final drafts are due no later than Friday, May 10th.

Course Grading Policy: Your final grade in the course will be assigned as follows:

97.0-100.0%	A+	82.0-86.9%	B	69.5-71.9%	C-
92.0-96.9%	A	79.5-81.9%	B-	67.0-69.4%	D+
89.5-91.9%	A-	77.0-79.4%	C+	60.0-66.9%	D
87.0-89.4%	B+	72.0-76.9%	C	<60.0%	F

Learning Accommodations:

Minnesota State University Moorhead is committed to providing equitable access to learning opportunities for all students and strives to make courses inclusive and accessible in accordance with sections 504 and 508 of the 1973 Rehabilitation Act and the Americans with Disabilities Act. The University will make reasonable accommodations for students with documented disabilities. Accessibility Resources (AR) is the campus office that collaborates with students in need of accommodations and assists in arranging reasonable accommodations.

If you have, or think you may have, a disability (e.g. mental health, attentional, learning, chronic health, sensory or physical), please contact Accessibility Resources at (218) 477-4318 (V), (800) 627.3529 (MRS/TTY), kari.klettke@mnstate.edu or stop by to schedule an appointment with Kari Klettke, Director, in 154C Flora Frick Hall. Please also contact Accessibility Resources if you are currently registered for accommodations and have any questions or concerns. Additional information is available on the AR website: <http://www.mnstate.edu/accessibility>

Note: *If you are registered with the AR and have learning accommodations, please schedule an appointment to visit with me during my office hours to discuss implementation of your accommodation(s).*

Sexual Violence Policy:

Acts of sexual violence are intolerable. MSUM expects all members of the campus community to act in a manner that does not infringe on the rights of others. We are committed to eliminating all acts of sexual violence.

MSUM faculty and staff are concerned about the well-being and development of our students. We are obligated to share information with the MSUM Title IX Coordinator in certain situations to help ensure that the students' safety and welfare is being addressed, consistent with the requirements of the law. These disclosures include but are not limited to reports of sexual assault, relationship violence, and stalking.

If you have experienced or know someone who has experienced sexual violence, services and resources are available. You may also choose to file a report. For further information, contact Lynn Peterson, Title IX Coordinator, petrsnly@mnstate.edu; 218-477-2967, or Ashley Atteberry, Director of Student Conduct & Resolution; ashley.atteberry@mnstate.edu, 218-477-2174; both located in Flora Frick 153. Additional information is available at: www.mnstate.edu/titleix

Academic Honesty:

Since the focus of this course is on writing, it is imperative that the writing that you submit must be your own original work or appropriately acknowledged. In particular, **if you incorporate any of the following from other sources in your writing, credit must be properly given: diagrams, figures, graphs; quoted material; information not generally available from multiple sources; specific data sets.** In addition, references should be given where an interested reader may learn more about the topic you are writing on.

Cheating and plagiarism will not be tolerated in any course at any level. See the MSUM Academic Honesty policy for more information on the possible consequences of cheating.

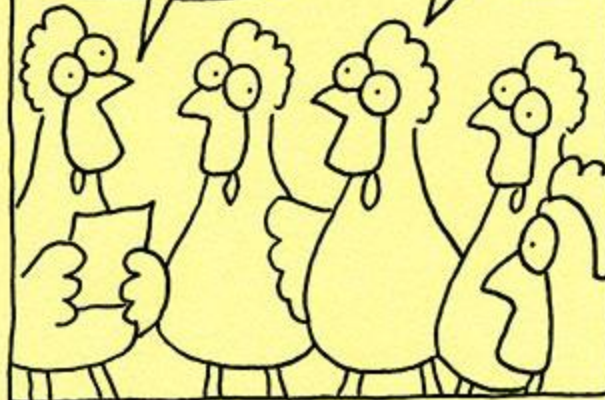
Note: Tutors trained to help with general writing are available through the University Writing Support Center. For more information, please visit their website: <https://www.mnstate.edu/write/>.

Thanks, And Let's Have A Great Semester!!

HOW TO SURVIVE A
TEAMBUILDING ACTIVITY

SHARE SOMETHING
ABOUT YOURSELF
THAT NOBODY IN
THE GROUP KNOWS

I HATE
YOU ALL!



TIP #6: TRY TO HAVE FUN WITH IT.

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