Math 419 Historical Perspectives of Mathematics Spring 2026

Instructor Amites Sarkar

Text Math through the Ages (2nd edition)
William Berlinghoff and Fernando Gouvêa

Syllabus

I'll cover a selection of topics from the origins of counting to the invention of calculus.

Overview

It has been said that the insights of one generation become the instincts of the next. Subjects such as differential calculus were once a secret art understood only by a very small number of specialists – today they are taught to millions of people worldwide every year. The famous mathematician Louis Mordell once wrote:

Mathematical study and research are very suggestive of mountaineering. Whymper made several efforts before he climbed the Matterhorn in the 1860's and even then it cost the life of four of his party. Now, however, any tourist can be hauled up for a small cost, and perhaps does not appreciate the difficulty of the original ascent. So in mathematics, it may be found hard to realise the great initial difficulty of making a little step which now seems so natural and obvious, and it may not be suprising if such a step has been found and lost again.

This is precisely what makes the study of the history of mathematics both interesting and difficult. We have to try to get inside the minds of people who thought in a very different way and who did not have access to intellectual tools (e.g. algebra) that we take for granted.

Class activities

Expect lectures, discussions, writing, and problem solving.
Occasionally, we will watch a video.

Grading

There will be no exams, but you are responsible for attending and participating actively in each class, and for the writing assignments, which I'll discuss in more detail in class. This is a Writing Proficiency course, so the majority of your grade will be based on the quality of your writing and the clarity of your ideas and arguments. Specifically, your grade will be based on the following:

Short paper	20%
Term paper	40%
In-class writing assignments	15%
Homework and participation	25%

Course objectives

The successful student will demonstrate an understanding and appreciation of:

- The development of mathematics as a creative human activity
- The evolution of mathematical ideas over time
- The structure and rigor of mathematics as viewed from a historical perspective
- The relationships between different parts of mathematics
- The importance of primary sources

AI

Use of AI is not allowed for this class. Please submit only original work.

Please don't use AI to draft or complete your work. I will ask you to come talk to me if I have any concerns. If you need support writing papers or completing assignments, come to my office hours and I'll work with you one on one. My goal is for you to learn how to do this work by yourself. **It is not about the output, but the process.** Violation of this AI policy could lead to a referral to Academic Integrity. So can noncooperation if I send you an email to come talk to me about how you completed your work.

Office hours

My office hours are 11–11:50 am on Mondays, Tuesdays and Thursdays and 1–1:50 pm on Fridays.

My office is 216 Bond Hall, and my e-mail is amites.sarkar@wwu.edu.