

MAT 336 History of mathematics

Syllabus

Prof. Moira Chas

Department of Mathematics

Stony Brook University

Fall 2021

**I can't wait to share the
beautiful development of
mathematics with you!**

PollEverywhere

- We are going to use the interactive platform PollEverywhere for questions, polls and surveys.
- Register in the corresponding link in the course schedule (In the linked site, go to "Sign in with Google" and sign in with your SB email) .
- You will be able to answer the questions in this platform from a web browser, via text message or a smart phone app.

Course Schedule

<https://www.math.stonybrook.edu/~moira/courses/mat336-fall2021/schedule.html>

Note: A quick way to find the course website is googling my name, go to my website and find there the link for the course.

PollEverywhere (cont)

- Every time a yellow slide comes up, there will be a PollEverywhere question.
- PollEverywhere questions are graded for effort (answer or not answer) and not for completeness.
- I read the answers to have an idea of how and what are you thinking about. Please help me help you by answering carefully, thinking and not “googling”.

It would be great if I
could hear all voices.

Course delivery mode and meeting times

- In person (if we remember how to do that!)
- With masks (please pretty please)
- Here and now
- Lecture 1: Tu - Th 11:30am to 12:50pm, Physics P130, Math Tower.
- Lecture 2: Tu - Th 3pm to 4:20pm, Physics P113, Math Tower.

Who am I?



I was born in
Buenos Aires,
Argentina

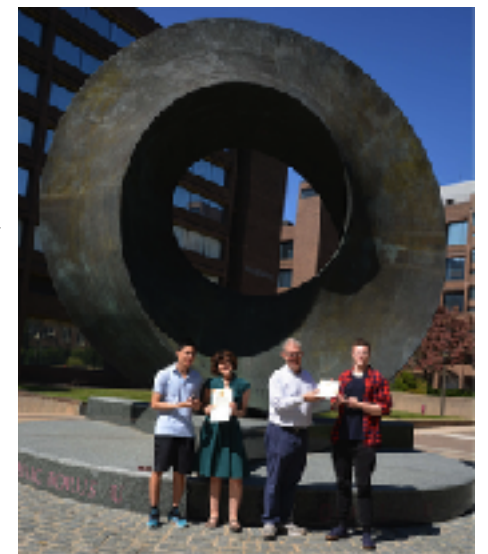
I studied “licenciatura” in
Mathematics at the University
of Buenos Aires



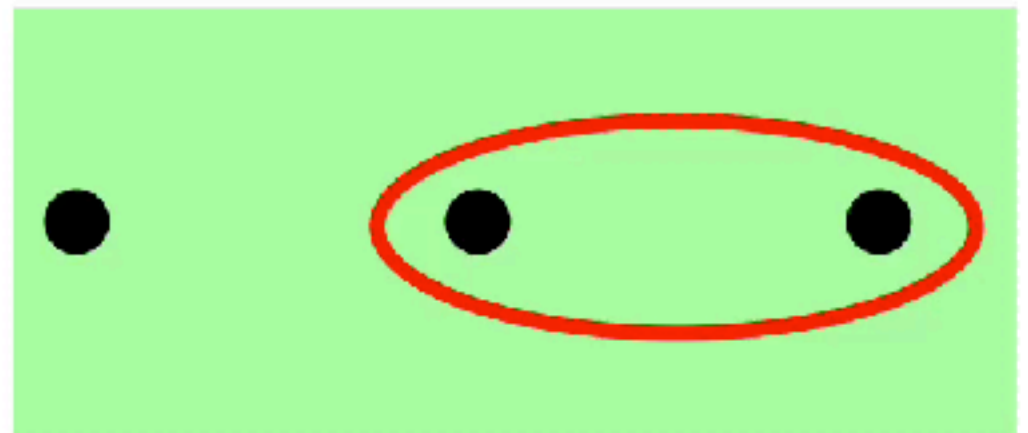
I did my PhD at the Autònoma University of
Barcelona



I'm an associate
professor at Stony
Brook University,
New York, US



<http://www.math.stonybrook.edu/~moira/>



Who are you?

- Five minutes
- Make groups of three or four people such that
 - No two members of the group talked to each other before today.
- Find and “x” that all members of the group have in common. (Examples of x : eye color, love for birds, knowledge of C++)
- For each member of the group, find an x that only that member of the group has.

This is an icebreaker.
Have fun.
Don't overthink.

- The group will present their findings to the class in the following way:
- Each member says something.
- No member of the group can talk about their own x

Some of the ways I teach

- Asking questions to guide your discovery and understanding of the ideas.
- Helping you make mistakes (!!!) that will lead to the understanding of the ideas.
- Listening where you are, and trying to meet you there.
- Designing activities
- Lecturing (However, I believed that content delivery ≠ teaching)

More about me and this course

- The main point of Poll Everywhere questions, forms, deadlines and class activities is encouraging you to think and learn, not to evaluate.
- Constructive feedback is welcomed by me, your instructor.
- I might post (or send a survey) every now and then. Your answers will be carefully read.
- Feel free (and encouraged!) to discuss with me classroom any dynamics issue that affects you.

A picture of a lecture I will work on **avoiding**



Image credit: Could not find it.

How?

With active learning.

- GoogleSlides
- Breakout rooms.
- PollsEverywhere.
- Questions
- Reviews.
- Quizzes
- ...

All the activities of class
are tools to help you
learn.

I'M TEACHING

contrast
with

“I hear and I forget
I see and I remember.
I do and i understand”

Confucius

Active learning increases student performance in science, engineering, and mathematics

Scott Freeman^{a,1}, Sarah L. Eddy^a, Miles McDonough^a, Michelle K. Smith^b, Nnadozie Okoroafor^a, Hannah Jordt^a, and Mary Pat Wenderoth^a

^aDepartment of Biology, University of Washington, Seattle, WA 98195; and ^bSchool of Biology and Ecology, University of Maine, Orono, ME 04469

Edited* by Bruce Alberts, University of California, San Francisco, CA, and approved April 15, 2014 (received for review October 8, 2013)

To test the hypothesis that lecturing maximizes learning and course performance, we metaanalyzed 225 studies that reported data on examination scores or failure rates when comparing student

225 studies in the published and unpublished literature. The active learning interventions varied widely in intensity and implementation, and included approaches as diverse as occasional group



<https://www.pnas.org/content/111/23/8410>

Fixed mindset	Instead of	Try thinking	Growth mindset
	I am not good at this	What am I missing?	
	I am awesome at this	I am on the right track	
	I give up	This might take longer than I expected	
	This is too hard	I'll try to use some of the strategies we learned	
	I can't make it any better	I can improve if I keep trying	
	I am not a math person	I can train my brain to do math.	
	I am upset because I made a mistake	Mistakes help me learn better	
	The problem is that X is smarter than me	I'll try to learn how X does it.	
	It is good enough	How can I improve this?	
	My strategy didn't work.	What other strategy I can try?	
	This is too easy for me	Can I understand this more deeply?	
			Unknown source

What I expect from everybody (including myself) in the classroom

- Respect for each other and for the different societies and cultures we will find.
- Kindness
- Open mind.
- Effort
- Being present during lectures

**I hope for growth mindset and
curiosity.**

Mistakes can be valuable for learning. The emphasis will not be on not making mistake but on learning from them.

My space and cyberspace and time coordinates

Moira Chas, Associate professor

Best way to contact me:

moira.chas at stonybrook.edu

Website: <http://www.math.sunysb.edu/~moira/>

Office: 3-113 Math Tower

Zoom: <https://stonybrook.zoom.us/my/mchas>

How to address me? Professor Moira is OK

My pronouns are she, her, hers.

Office hours

- Tu 1 to 2 pm in 3-113
- Th 10 to 11am online.
- Th 1 to 2pm in 3-113
- or by appointment (email me!).
- (Before or after class is always an option, but remember that I have office hours at 1pm Tu-Th)

Note: A quick way to find the course website is googling my name, go to my website and find there the link for the course.

Graders space and cyberspace coordinates

Lecture 1 (11:30am)

Talika Basantani

Email :

talika.basantani at stonybrook.edu

Talika's Zoom link is [here](#).

Office hours

- Monday 1:00pm-2:00pm
- Thursday 4:00pm-6:00pm

My name is Talika Basantani and I am a senior studying mathematics with a minor in theatre arts. I want to become a high school math teacher in the future. My favorite branch of math is geometry!

Lecture 2 (3pm)

Molly Heneghan

Email :

molly.heneghan at stonybrook.edu

Molly's link is [here](#).

Office hours

- Thursday 9am to 12pm.

I'm Molly and I'm a third year undergrad student double majoring in Math and Economics. I enjoy studying linear algebra and game theory, and in my spare time I like making art and running but most of all I enjoy sharing my excitement for Math!

What the Bulletin says

MAT 336: History of Mathematics

A survey of the history of mathematics from the beginnings through the 19th century, with special attention to primary sources and to the interactions between culture and mathematics. Emphasis on topics germane to the high school curriculum. Mesopotamian, Egyptian, and Greek mathematics; non-European mathematics; early Renaissance mathematics; the birth and flowering of calculus; the beginnings of probability theory; and the origin of non-Euclidean geometries and the modern concept of number.

Prerequisite: MAT 200 or MAT 203 or or MAT 250 or MAT 307 or AMS 261

DEC: H

SBC: SPK, STAS, WRTD

3 credits

What I say

History of Mathematics

This is , in the opinion of your instructor, a **fascinating** course about how we - human beings- created and developed mathematical ideas. It will allow us to think about these mathematical ideas and look at how different groups develop them with their own point of view.

We will start in the very beginning, discussing what we know about the mathematics of the first societies we know of. We will continue through Egypt, Mesopotamia, the Hellenic world, China, India, the Islamic world, the European Renaissance and we will finish discussing selected topics of modern mathematics.

Course objectives

- Understand the mathematical progress starting from what we know about the beginning of mathematics, continuing with ancient cultures such as Egypt, Babylonia, Greece, China, India and the Islamic world, the European Middle Ages, the Renaissance, and finishing the seventeenth and eighteenth centuries in Europe and the Americas;
- Solve mathematical problems from the societies under study in the way these problems were solved at the time.
- Comprehend mathematical primary sources from different periods.

My objectives

- Assist you in removing your 21st century local glasses and in looking at the math world of ideas with new eyes.
- Help you learn and appreciate the beauty of mathematics
- Help you review and understand basic concepts of mathematics.

SB Learning Objectives

- Successful completion of MAT 336 with a C or better satisfies DEC H and the **expository portion of the upper-division writing requirement** for the mathematics major, as well as the SPK, STAS and WRTD objectives of the Stony Brook Curriculum.
- Learning Outcomes for "**Understand relationships between Science or Technology and the Arts, Humanities or Social Sciences (STAS)**": Apply concepts and tools drawn from any field of study in order to understand the links between science or technology and the arts, humanities or social sciences. Synthesize quantitative and/or technical information and qualitative information to make informed judgments about the reciprocal relationship between science or technology and the arts, humanities or social sciences.
- Learning Outcomes for "**Speak Effectively before an Audience (SPK)**" Research a topic, develop an oral argument and organize supporting details. Deliver a proficient and substantial oral presentation for the intended audience using appropriate media. Evaluate oral presentations of others according to specific criteria.
- Learning Outcomes for "**Write Effectively within One's Discipline (WRTD)**" Collect the most pertinent evidence, draw appropriate disciplinary inferences, organize effectively for one's intended audience, and write in a confident voice using correct grammar and punctuation.

Topics

- The beginning of mathematics
- Number systems
- Sources for studying history.
- Ancient Egypt
- Ancient Mesopotamia
- Around the world
- Hellenic Mathematics
- Ancient and Medieval China
- Ancient and Medieval India
- Ancient and Medieval Islamic world
- European Renaissance
- Calculus
- Selected topics of modern mathematics

If you have a special interest in a math history topic, let me know. We might be able to cover it.

Topics (cont.)

- The beginning of mathematics
- Number systems
- Sources for studying history.
- Ancient and Medieval India
- Ancient and Medieval Islamic world
- European Renaissance

We will go deeper than wider

- Ancient Mesopotamia
- Around the world
- Hellenic Mathematics
- Ancient and Medieval China
- Selected topics of modern mathematics

If you have a special interest in a math history topic, let me know. We might be able to cover it.

Topics (cont.)

- We will discuss how mathematics has developed in various cultures around the world.
- There is an extremely large number of cultures
- We will have to **choose** a few sample cultures to represent the whole.
- The criteria for these choices is based, among other reasons on pedagogical arguments, on which culture have best-recorded mathematical history and accessible documentation to work with, weight of this culture in the mathematics we do today.

<http://www.math.stonybrook.edu/~moira/courses/mat336-fall2021/schedule.html>

The schedule

Week	Topics Covered	Assignments	Presentations
I-8/24	Administrative details What is mathematics? The begining of counting Timeline of mathematics	<p>Register on for the interactive platform before the first lecture, use your SB email.</p> <ul style="list-style-type: none"> Lecture 1, 11:30am link. Lecture 2, 3:00pm link. <hr/> <p>Fill form: Homework 0 (due 8/27)</p> <ul style="list-style-type: none"> Lecture 1, 11:30am link. Lecture 2, 3:00pm link. <hr/> <p>Fill form: topics for presentation (due 8/27)</p> <ul style="list-style-type: none"> Lecture 1, 11:30am link. Lecture 2, 3:00pm link. 	Not yet
II - 8/30	The Ishango bone Number systems Primary and Secondary Sources Using the Web	<p>Homework 1</p> <p>Reading</p>	Not yet
III - 9/6	Ancient Egypt Number system. Multiplication and Division Unit fractions and the 2/n table Method of False position. Areas and Volumes. The Pythagorean Theorem Tokens	<p>Readings (due Tuesday 9/7): The World's First Mathematics Textbook On the Egyptian method of decomposing into unit fractions(first six pages)</p> <p>Quizz 1</p>	Thursday: On the Egyptian method of decomposing into unit fractions
IV - 9/13	Mesopotamia Number System and cuneiform notation Tables of reciprocals and multiplications Solutions of linear and quadratic equations Square roots and the Pythagorean theorem Plimpton 322	<p>Form topic, bibliography and abstract of the paper.</p> <p>Homework 2</p> <p>Readings (due Tuesday 9/14): Words and Pictures: New Light on Plimpton 322 (Sections 1, 2, and 6)</p>	<p>Tuesday: History of the sexagesima system</p> <p>Tuesday: A River-Crossing Problem in Cross-Cultural Perspective2</p> <p>Thursday: Words and Pictures: New Light on Plimpton 322</p>

http://www.math.stonybrook.edu/~moira/courses/
mat336-fall2021/schedule.html

The schedule (cont.)

Week	Topics Covered	Assignments	Presentations
I-8/24	<ul style="list-style-type: none"> This schedule will be updated with the progress of the class. Please email me if you find a mistake, broken link or something confusing. Homework are due on Thursdays at the beginning of the class. Forms must be filled before Friday 11:59pm of the week they are assigned. 	<p>Register on the interactive platform before the first lecture, use your SB e-mail.</p> <ul style="list-style-type: none"> Lecture 1, 11:30am link. Lecture 2, 3:00pm link. <p>Fill form: Homework 0 (due 8/27)</p>	Not yet
II - 8/30	<ul style="list-style-type: none"> Readings are due on Tuesdays, before the class Links to statement of homework problems, forms and presentations are in the schedule. 	<p>Homework 1</p> <p>Reading</p>	Not yet
III - 9/6	<ul style="list-style-type: none"> If for a justifiable reason you cannot submit work, please explain in <u>this form</u>. 	<p>Readings (due Tuesday 9/7): The World's First Mathematics Textbook On the Egyptian method of decomposing into unit fractions (first six pages)</p>	<p>Thursday: On the Egyptian method of decomposing into unit fractions</p>
IV - 9/13	<p>Number System and cuneiform notation</p> <p>Tables of reciprocals and multiplications</p> <p>Solutions of linear and quadratic equations</p> <p>Square roots and the Pythagorean theorem</p> <p>Plimpton 322</p>	<p>Form topic, bibliography and abstract of the paper.</p> <p>Homework 2</p> <p>Readings (due Tuesday 9/14): Words and Pictures: New Light on Plimpton 322 (Sections 1, 2, and 6)</p>	<p>Tuesday: History of the sexagesima system</p> <p>Tuesday: A River-Crossing Problem in Cross-Cultural Perspective2</p> <p>Thursday: Words and Pictures: New Light on Plimpton 322</p>

Course materials

- There is no mandatory textbook.
- We will use a wealth of online materials (all relevant links can be found in the course website). These materials consist of:
 - Texts about math history.
 - Historical documents (or translations to English of historical documents)
- We will study texts with different points of view.
- In the “Useful links” of the course website, you’ll find links to good sites for research.

Course website

<http://www.math.stonybrook.edu/~moira/courses/mat336-sp2021/>

PollsEverywhere



Questions?

The web and this course

● Course website

- Lecture slides (completed after class)
- Link for making presentation rehearsal appointment
- Link for evaluation of presentations
- Syllabus
- Course schedule
- Homework Assignments
- Links of good sources of material for the course.

● PollsEverywhere

- ◆ Interactive questions during lectures
- ◆ Summary of each lecture at the end. (if we do not have time do it in class, it will be open until midnight of the day of the lecture)

● Course schedule

- ◆ All deadlines

- ◆ Link for submission of slides and work related to paper

● Blackboard (check it daily)

- ◆ Grades
- ◆ Announcements.
- ◆ Discussion forum
- ◆ Surveys
- ◆ Submission of homework, quizzes, draft of paper, paper.

● SB Email (check it daily)

- ◆ Announcements
- ◆ If you email me
 - ◆ Please use subject “MAT 336”
 - ◆ write ONLY if you have a question that you need to ask privately or that only pertains to you and you are absolutely sure that no other student will have a similar question.

Communications spelled out

- Regular Announcements, which will be posted in Blackboard and may or may not be sent via email. In other words, check Blackboard daily.
- Email announcements. Again, check your SB email daily. We (you and me) will both use your SB email account.
- Email (if you email me, use the subject MAT 336). I am a bit fastidious, (sorry!) so please start your letter with a greeting and use complete English sentences.
- **ALL** your course-related questions should be posted in the General Questions forum in the course Discussion board in Blackboard, so everyone can benefit.
- If you can answer or offer relevant comments to a question in the Discussion Board, you are warmly encouraged to do so.
- Your visits to office hours (graders' or mine)
- Any question about grades for homework and quizzes must be directed to the corresponding grader. Be aware that while the graders are in charge of the actual grading, I am the one designing the questions and determining how long quizzes are.

I will not answer individual questions by email, unless you have a question that only pertains to you.

Tips to succeed in this course

The obvious

- Check Blackboard and your SBU email regularly
- Keep track of all due dates and plan ahead!
- Complete all assigned readings in the course
- Complete all assignments and readings on time:

The less obvious

- Be **present** in the lectures.
- If any issue arise that interferes with our learning, please communicate on time. The more you wait, the harder will be to find a solution.
- I want you to succeed in this course. Help me help you.
- I understand that almost, if not all of us, are exhausted, stressed, anxious in this trying pandemic. Let's try to use the wonders of math to better survive this period.

There are no dumb
questions

Student Accessibility Support Center Statement:

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Inion Suite 107, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website: <https://ehs.stonybrook.edu/programs/fire-safety/emergency-evacuation/evacuation-guide-people-physical-disabilities> and search Fire Safety and Evacuation and Disabilities.

Academic Integrity Statement:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Important Note: Any form of academic dishonesty, including cheating and plagiarism, will be reported to the Academic Judiciary.

Critical Incident Management:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community

Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the

HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

Course Policies

Understand When You May Drop This Course:

If you need to drop or withdraw from the course, it is your responsibility to be aware of the tuition liability deadlines listed on the registrar's [Academic Calendar](#). Before making the decision to drop/withdraw you may want to [contact me or] refer to the University's policies:

- [Undergraduate Course Load and Course Withdrawal Policy](#)

Incomplete Policy:

Under emergency/special circumstances, students may petition for an incomplete grade. Circumstances must be documented and significant enough to merit an incomplete. If you need to request an incomplete for this course, contact me for approval as far in advance as possible. You should also read the University's policies that apply to you:

[Undergraduate Bulletin](#)

Course Materials and Copyright Statement:

Course material accessed from Blackboard, Zoom, Echo 360, VoiceThread, etc. is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity.

Attendance and participation policy

- While I will not check attendance directly, you will need to be in class to work on the proposed activities.
- There are many ways of participating in the class, I hope you find one or more that works with you.

**What should be our policy with
phones and other devices?**

The grades

What	% of the grade
HW 0	1%
Homework	12% (divided equally among all homework)
Quizzes	12% (divided equally among all quizzes)
Poll Everywhere Answers	20% (1 point = 1 question answered. I will not grade for “correctness”. In some cases, there will not even be a correct answer)
Presentation evaluation	5% (1 point = 1 question of the form answered)
Presentation	25%
Paper	25%

The Math Point (for paper and presentation)

Math Point

- Addition to the syllabus: A "math point" is a concrete, purely mathematical aspect of the topic which is mastered by the student. This math point can be, for instance, the solution of a problem, or the proof of a statement. It does not have to be the "whole" mathematical aspect of the topic. Examples of math point are:
 - Combinations and binomial coefficients as explained in Pascal's "Traite du triangle arithmetique".
 - Liu Hui and Tsu Keng-chih 's calculation of the Volume of a Sphere
 - Analogues of Pythagorean Theorem with the areas of different shapes, for instance squares, triangles and trapezoids.
 - Desargues Theorem
 - The paper will go over the specific logical problem in question and explain the mathematical and logical structure behind solving it.

The presentation

The presentation

Engage
your
audience!



Foto credit: The Simpsons

- The **goal is to teach something** to the class.
- I will give a list of possible choices for the presentation topic and try to maximize satisfaction.
- It is strongly encouraged **included a learning activity** for the class to help. (you can have a few extra minutes in this case)
- There will be a few minutes of questions afterwards. Each student must ask at least one question during the semester (and fill this form about it)
- It is totally fine if you cannot to answer a question on the spot. If that happens, keep thinking about it and tell us the following week.
- Notes to help your memory are fine. However, the presentation cannot consist only of reading.
- Speaking in public can be scary, but **we will be a kind, supporting audience**, rooting for you.
- Here you have an example of an excellent presentation, as well as the slides. Note that the presentation is longer than the required duration in this course.

PRESENTATION DAY RUBRIC 1 - STUDENTS AND INSTRUCTOR	POINTS
The content was compelling, engaging and covered the topic thoroughly. It was interesting.	4
I learned something from the presentation.	4
None of the slides were simply been copied and pasted from another source. The slides display elements of effective design. Fonts, colors, backgrounds, etc. are effective, consistent and appropriate to the topic and audience.	4
The information given in the presentation reflected deep understanding and effective summarization.	4
The math point was clear and well explained. All steps were justified.	4
There was at least one well chosen, relevant example related to the math point.	3
The presentation was addressed to an audience who are not necessarily mathematicians, rather somebody who know some mathematics (say, sophomore Math major, at Stony Brook who know what a proof is.)	2
Images were appropriate and contributed to the understanding	2
The presentation had a clearly defined structure with elegant transitions and I was able to follow it.	2
There was a good introduction, briefly explaining the historical frame of the topic.	2
Diagrams, figures and tables are clearly captioned, and, if appropriate, they include credits. They are referenced in a consistent way. (If a diagram, figure or table is not referenced, it is probably not relevant). Illustrations, tables and diagrams created by the students are encouraged.	3
The presenter's notes were appropriately used	1

PRESENTATION INSTRUCTOR RUBRICK

Outline, abstract, bibliography and draft of slides were presented on time.	1
The presentation was rehearsed with the me one week before the presentation.	1
The student made an appointment to rehearse the presentation.	1
The presentation lasted between 10 and 12 minutes	2
The slides did not contain more than 150 words (that is, the sum of the words in each slide is less than 150). Note: If you really need to put more than 150 words, discuss it with me	3
The bibliography contained a book (which was used!)	2
The bibliography contained a primary source (which was used!)	2
The bibliography contained a secondary source (which was used!).	2

Recall: I encourage you (but it is not mandatory) to

- Create an handout for your classmates
- Create an activity for your classmates to learn the topic (I can give you extra time if necessary for the activity)

Presentation Evaluation

- After some presentations, each student (including the speaker) will write a short evaluation of the lecture.
- Each of the questions will be graded by Complete or Incomplete.
- Your answers will be private, only for my eyes (and those of the graders). If I decide to share students answers with a student speaker, I will remove the names.
- If you miss class for a justified reason fill the appropriate form and I will balance the grades accordingly.

Bibliography of the presentation (more)

- It contains at least one book. (Besides the Stony Brook Library, good sources of online books are the [Internet Archive](#) and [Project Gutenberg](#))
- It contains at least one primary source, possibly translated from the original language. (A primary source is an original writing -possibly translated- from the area under study. For instance, [Euler on the Bridges of Koningsberg](#), translated by Prof. Phillips, or [The Foundations of Geometry](#) by David Hilbert.)
- It contains at least one secondary source. A secondary source is a paper that elaborates on a primary source. The paper "[Jiu zhang suan shu](#)" ([Nine Chapters on the Art of Mathematics](#)) - An Appraisal of the Text, its Editions, and Translations is an example of a secondary source. ([JSTOR](#) is a good source of such papers).
- The book, the primary source and the secondary source must be different.

Bibliography of the presentation (even more)

- Each of the presentations is linked to a suggested paper. It is not mandatory to use the suggested paper.
- All websites in the “Useful links” section of the course site are great sources. If you are citing another website, **make sure it is a reliable source of information**. If you are not sure, ask in Blackboard discussion forum.
- All formats for a bibliography entry are acceptable as long as they are clear, complete and precise. (Google scholar is usually helpful. Check the “ below an entry). The URL address can be added but it cannot replace all the other data (author, title, year, etc). JSTOR also gives citation. For instance, the secondary source cited above is Dauben, Joseph W. “九章算术 ‘Jiu Zhang Suan Shu’ (Nine Chapters on the Art of Mathematics) - An Appraisal of the Text, Its Editions, and Translations.” Sudhoffs Archiv, vol. 97, no. 2, 2013, pp. 199–235. JSTOR, www.jstor.org/stable/43694474. Accessed 14 Aug. 2020.

Outline and draft abstract checklist:

- The abstract is a short summary (no more than 300 words) of the material.
- The outline describes the structure of the paper or the presentation.
- There are examples of outline and abstract [here](#).

About the slides of the presentation

- Recall that the maximum number of words in total must be less than 150 (150 is an arbitrary upper bound, but you have to have very few words).
- The goal of the slides must be enhance the speaker presentation.
Reading from the slides does not enhance your presentation in general.
(Of course, it is fine to read a couple of statements)
- Whatever format you use must help your audience to understand the material (For instance, sometimes a busy background distracts instead of help)
- I will try to follow the model I propose you for slides (that is, not too many words, illustrations relevant and credited, etc). However, since the purpose of these slides is twofold (give the lecture and provide you with material to study outside class), I may need to break these rules.

Paper

Checklist for the draft of the paper

- Your draft has at least 2500 words.
 - Your draft is submitted on time.
 - Your draft is not necessarily the finished paper but is a readable document that "makes sense".
 - The topic has been chosen by you and approved by me.
 - The topic is different from that of the presentation.
- I will give you feedback on your draft, so the more complete it is, the more you will be able to improve the final paper.
 - A "complete" grade in the draft means that it "makes sense". We (the graders and myself) will not be able to carefully read all the draft. If you have any question, please ask either of us for our opinion.
 - Advice: Read also the checklist of the paper before submitting the draft.

Bibliography of the paper (more)

- It contains at least one book. (Besides the Stony Brook Library, good sources of online books are the [Internet Archive](#) and [Project Gutenberg](#))
- It contains at least one primary source, possibly translated from the original language. (A primary source is an original writing -possibly translated- from the area under study. For instance, [Euler on the Bridges of Koningsberg](#), translated by Prof. Phillips, or [The Foundations of Geometry](#) by David Hilbert.)
- It contains at least one secondary source. A secondary source is a paper that elaborates on a primary source. The paper "[Jiu zhang suan shu](#)" ([Nine Chapters on the Art of Mathematics](#)) - [An Appraisal of the Text, its Editions, and Translations](#) is an example of a secondary source. ([JSTOR](#) is a good source of such papers).
- The book, the primary source and the secondary source must be different.
-

Bibliography of the paper (even more)

- All websites in the “Useful links” section of the course site are great sources. If you are citing another website, make sure it is a reliable source of information. If you are not sure, ask in Blackboard discussion forum.
- The paper must contain appropriate citations. Numerical pointers to the bibliography are fine.
- All formats for a bibliography entry are acceptable as long as they are clear, complete and precise. (Google scholar is usually helpful. Check the “ below an entry). The URL address can be added but it cannot replace all the other data (author, title, year, etc). JSTOR also gives citation. For instance, the secondary source cited above is Dauben, Joseph W. “九章算术 ‘Jiu Zhang Suan Shu’ (Nine Chapters on the Art of Mathematics) - An Appraisal of the Text, Its Editions, and Translations.” *Sudhoffs Archiv*, vol. 97, no. 2, 2013, pp. 199–235. JSTOR, www.jstor.org/stable/43694474. Accessed 14 Aug. 2020.

Outline and abstract of paper checklist:

- The abstract is a short summary (no more than 300 words) of the material.
- The outline describes the structure of the paper or the presentation.
- There are examples of outline and abstract [here](#).

Paper checklist-rubric

Content	POINTS
The bibliography contains a book. (and book the was appropriately cited!)	2
Your paper has a good introduction, briefly explaining the the content section by section, and why it is interesting or relevant.	4
The bibliography contains a primary source (and primary the was appropriately cited!)	2
The bibliography contains a secondary source (and secondary source the was appropriately cited!)	2
Your paper contains more at least three figures, diagrams or tables that are relevant and contribute to the understanding of the material . Illustrations, tables and diagrams created by the you are strongly encouraged.	5
Your paper contains compelling, engaging content that covers the topic thoroughly.	6
Your paper is addressed to an audience who are not necessarily mathematicians, rather somebody who know some mathematics (say, sophomore Math major, at Stony Brook who know what a proof is.)	4
Your paper contains historical antecedents of the points you are explaining, and their historical consequences. It only contains relevant details in biographical sketches.	2
Your paper displays creativity, originality, and a personal point of view.	3
Your paper contains a brief historical frame of the topic in question,	3
The paragraphs are double spaced and have their first line indented.	1
Your paper is divided into sections (similar those you listed in the outline)	1

Paper checklist-rubric (cont.)

Format	
Outline, abstract, bibliography and draft of paper were presented on time.	1
The word count of the body of the paper was between 2500 and 3500 words. (excluding the bibliography, outline and abstract).	1
The first page (s) of the paper contains the title of the paper, the name of the student, the outline, math point, the abstract, book, primary source, secondary source and words count (counted excluding the bibliography, outline and abstract).	1
Your paper is written in an easily readable font (like Times New Roman or Cambria), size 12 pts.	1
Your paper is in PDF form.	1
Your paper is submitted through Blackboard.	1
Your paper is divided into sections (possibly the ones you listed in the outline)	1
Diagrams, figures and tables are clearly captioned, and, if appropriate, they include credits. They are referenced in a consistent way. (If a diagram, figure or table is not referenced, it is probably not relevant).	2
Math	
Mathematical general content is clear and relevant.	5
Your paper contains a very clear discussion of a particular math point is well understood and explained. This math point can be, for instance, the solution of a concrete problem, or the proof of a statement. It is a part (not the whole) of the mathematics of your topic. The “math point” has to be something that you understand very well.	6
Writing	
Writing is clear, with no grammatical, spelling, or punctuation errors. Ideas are arranged logically and flow smoothly.	4

Homework and quizzes

Homework and Quizzes Rubric

Points	Solution	Justification	Conceptual understanding	Mathematical errors
5	Complete , correct and well written. Great effort	All steps are justified	Apparent	Minor
4	Almost complete and correct, well written. Good effort	Most steps are justified	A bit less than apparent	A couple
3	Correct but unclear or some parts missing. Good effort	Some steps are justified	Adequate	Possibly many
2	Many parts missing or unclear. Some effort	Little or deficient justification	Less than adequate	Possibly many
1	Incomplete. Little effort.	No justification	Lacking	
0	Missing or makes no sense. No effort			

Homework

- There will be six homework assignments.
- The questions will be posted on the course schedule the Friday of the before it is due .
- The graders will grade only selected problems on the homework.
- If needed, materials will be posted in the course schedule to supplement what we do in class. Information from lectures and materials posted in the schedule should be enough to solve the homework problems. If you have doubts, do not hesitate to ask on the discussion board on Blackboard.
- While you are **encourage to discuss homework problems with your classmates**, (and of course ask about them in the office hours) your write-up must be your own. In particular, you are is not allowed to "cut and paste" content from the internet.
- Make sure your work is legible and understandable. Otherwise, the grader will have to return it without grading.
- Write in complete sentences, tell a story.
- Your effort is important and count towards your grade.

Quizzes

- There will be five quizzes. Each of them will take place on Thursday at the beginning of class. Precise dates are announced in the course schedule.
- Quizzes will be about what has been discussed in class during the previous couple of weeks, as well as the reading. The material of each quiz will be posted on the course schedule on the Friday of the previous week.
- The questions will be similar to those on previous homework sets.
- You are not allowed surf the internet during the quizzes. You are ONLY allowed to have your class notes.
- A Sample Quiz will be posted in the course website.
- There will be no make-ups for the quizzes. If you are absent, you will receive a zero unless there is a serious documented reason (This reason should be posted in the corresponding form). In this case, the grade will be determined based on the balance of the work in the course.
- Make sure your work is legible and understandable. Otherwise, the grader will have to return it without grading.
- Write in complete sentences, tell a story.

Late work policy

- No late work will be accepted unless there is a justifiable reason. Contact me as soon as you think you will not be able to submit something in a timely manner.

ACADEMIC DISHONESTY

- All work you submit **MUST** be your own work.
- If you cheat or aid someone in cheating, you will automatically fail this course and be brought up on charges of academic dishonesty without warning.
- Cheating includes: presenting work of other as your own, copying other student work, facilitate that other student copies your work, use of non-allowed electronic devices during examinations.
- The term paper will be checked with SafeAssign and if cheating is detected, it will be reported to the Academic Judiciary.