

MATH 400 / HIST 387
Spring 2020
History of Mathematics MW 3-4:15 Exploratory Hall L111

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Course Description: This course explores the history of mathematics across the world, from the 3rd century BCE to the present. It will contextualize mathematicians and mathematical discoveries in their larger intellectual and social settings. Sessions will include discussions of the historical context as well as explorations of historical problem-solving techniques from China, India, the Middle East, Europe, and the Americas. We will examine themes that include the materiality of mathematics, the ways we assign credit to and value the work of historical mathematicians, and how culture influences mathematical practices. Students who sign up under the HIST 387 course number will receive credit for Mason Core Global Understanding (Non-Western Culture); students who sign up under the MATH 400 course number will receive credit for Mason Core Synthesis.

Prerequisites: One college math course, or comparable background (e.g. AP exams), and an interest in learning mathematics. (Plus MATH 290 if you register for the class as MATH 400)

Textbook: The History of Mathematics: A Very Short Introduction by Jacqueline Stedall, Oxford University Press 2012. ISBN-13: 978-0199599684.

We will also ask you to watch the movie Hidden Figures (2016) by April 27th.

The following textbook is optional:

A History of Mathematics: An Introduction, 3rd Edition by Victor J. Katz, Addison-Wesley 2009. ISBN-13: 978-0-321-38700-4.

Final Examination: Monday, May 11th 1:30-4:15pm. This exam will cover material from the whole semester. No makeup exams will be given without a documented excuse such as illness or emergency. In particular, travel plans are not a valid reason to miss the final exam.

Assignments: There will be a total of 1250 points available during assignments throughout the semester. During the first week of class, students will be guided in the creation of an individual workplan, in which they commit to completing a combination of assignments totaling at least 950 points. This workplan will be used to calculate their course grade and may be updated once, after the midterm exam. Mandatory assignments are marked with an *:

*Midterm 200

*Final Project 200

*Final Exam 200

*Course Participation 200

Short Responses 150

Problem Sets 150

In-Class Quizzes 150

Grading Scale: 930-1000: A	800-829: B-	600-699: D
900-929: A-	770-799: C+	0-599: F
870-899: B+	730-769: C	
830-869: B	700-729: C-	

Blackboard: All assignments, course information, and homework, quiz, and exam grades will be posted on Blackboard. Please check Blackboard regularly to ensure your grades have been recorded correctly.

Midterm Examination: In-class portion on Wednesday, March 18th, followed by take-home portion due on Monday, March 23rd. No makeup exams will be given without a documented excuse such as illness or emergency.

Exam Rewrites: You will be able to earn partial credit back on the midterm by redoing any problems or responses you got wrong, along with some additional problems/responses that demonstrate your knowledge of the material. More details will be given after the midterm.

Final Project: Each student must turn in a final project on a topic from the history of mathematics. This will take the form either of a 1500-1800 words (about 6-8 pages) paper or a plan to teach a unit on a topic in the history of math plus a detailed lesson plan for a 75-minute class that will be part of that unit. You must get your topic approved no later than Wednesday, April 1st in class, and the final project is due in class on Monday, May 4th. More details will be given in February.

Course Participation: Class time will consist of a mix of group work on problems that introduce and develop mathematical concepts and group discussion of what we can learn about historical cultures from class readings. You will be expected to work on problems together during class, and to participate during discussions. You will also earn some participation credit for activities outside of class such as attending office hours. Course participation will make up 200 points of your final grade.

On the first day of class we will set guidelines for participating effectively, and you will be expected to adhere to these guidelines.

Short Responses: There will be weekly homework assignments that continue the discussion of the readings during class. Short responses will be 300-500 words (1-2 pgs) and should explain what the readings reveal about the society in which they were written. Short responses will be graded on the strength of their arguments, the skill with which they deploy evidence in support of their thesis, and writing quality.

Problem Sets: There will be weekly homework assignments that continue the mathematical ideas we explore during class. Your write-ups of homework problems should be in full sentences, and should be written so that a classmate can follow your argument without prior knowledge of the problem. You may work together on the homework, but must write up your assignment separately and in your own words. Please list everyone you worked with on the homework and all sources you consulted.

Late Policy for Short Responses and Problem Sets: You have a 1-day grace period, after which the grade drops by $\frac{1}{2}$ point (or $\frac{1}{3}$ of a letter grade) each day after that. For problem sets, there is a hard deadline of 1-week late, after which the solutions will be posted and no further submissions will be accepted.

Quizzes: There will be a quiz at the end of each unit, covering the mathematics of the unit. The quizzes will be based on class work and homework problems, and will enable you to get feedback on your work before the exam.

Electronic Devices: You will want to bring a device such as a laptop, tablet, or phone to class in order to view the latest versions of the course materials during class. However, if you are distracted by having a device with you, you may print out the materials and bring hard copies with you instead.

Office Hours: You are strongly encouraged to come to office hours on a regular basis. If you cannot make our office hours, e-mail either of us to schedule an appointment at a different time. It is completely fine to do this.

Email Policy: Students must use their MasonLive email account to receive important University information, including communications related to this class. We will try to respond to all emails within 24 hours. If 48 hours have passed and you have not received a response, send a follow-up email.

Students with Disabilities: If you have learning needs and have been evaluated or are in the process of being evaluated by Mason's Disability Services (<http://ds.gmu.edu>), please let us know so that we may make certain you are receiving the support you need.

Academic Integrity: By putting your name on your assignments, you are acknowledging the integrity of your work. If you have any questions about academic integrity, please either consult with us or go to <https://oai.gmu.edu/mason-honor-code/>

You are strongly encouraged to discuss the homework with your classmates and to work together. Please come to office hours to ask for help as well. However, everything you submit must be your own work, and should reflect your own understanding. Copying a problem solution or essay from a classmate, the internet, or any other source is a violation of academic integrity. If you have any questions about the difference between working together and copying, or how to cite your sources, please come talk to us.

Mandatory Reporting: As faculty members, we are designated as a "Responsible Employee," and must report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's Title IX Coordinator per University Policy. If you wish to speak with someone confidentially, please contact one of Mason's confidential resources, such as Student Support and Advocacy Center (SSAC) at 703-993-3686 or Counseling and Psychology Services (CAPS) at 703-993-2380. The 24-hour Sexual and Intimate Partner Violence Crisis Line for Mason is 703-380-1434. You may also seek assistance from Mason's Title IX Coordinator by calling 703-993-8730 or email titleix@gmu.edu.

Tentative Class Calendar:

Dates	Topic
1/22	Introductions
1/27-29	Mesopotamia and the Pythagorean Theorem, 4500 BCE-600 BCE
2/3-2/17	Indian Mathematics, 1500 BCE - 1000 CE
2/19-3/4	Chinese Mathematics, 1500 BCE - 1000 CE
3/9-3/15	Spring Break
3/16	Librarian Visit and Catch-Up Day
3/18	Midterm (in-class portion, the take-home portion is due 3/23)
3/23-4/6	Islamic Mathematics, 600 CE - 1500 CE
4/8	American Mathematics, 1000 CE - 1600 CE
4/13-4/22	European Mathematics, 1000 CE - 1600 CE
4/27-4/29	Hidden Figures
5/4	Final Projects
5/11 (1:30-4:15pm)	Final Exam