

Syllabus
MA311 and MA501 History of Mathematics
Fall Term, 2023

Course Instructor

Instructor: Ivan Mann, PhD

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Office: U4106

Office hours: Monday 10:00 - 11:00, Thursday 3:00 - 4:00

Withdrawal The last day to drop this course without the payment of full tuition and fees is August 28, 2023. The last day to withdraw from this course with a grade of **W** is October 13, 2023.

Note The Course Instructor reserves the right to make changes to the course syllabus prior to or during the term. The Course Instructor will notify students, via email or Canvas Announcement, when changes are made in the requirements and/or grading of the course.

Class Meetings

Thursdays, 5:00 pm to 7:30 PM in UH4004. Students are expected to arrive promptly at 5:00 PM for each class meeting in order to receive credit for the class activities. Since class participation is a significant percent of your grade, punctuality is essential. If you commute to campus, leave time for unexpected parking and traffic delays when planning your trip to campus. In the event a student arrives after 5:00 PM (5:01 PM is late), partial credit for the class meeting grade may be awarded at the instructor's discretion.

Masks and Covid

UAB policy allows masks at all times inside any building. Common sense and courtesy allow masks in any close encounters outside.

Proposed list of Topics

(subject to change based on course progress)

1. Mathematics in Early Civilization
2. Beginnings of Greek Mathematics
3. The Alexandrian School: Euclid
4. The Twilight of Greek Mathematics

5. The Mechanical World: Gallileo to Descartes
6. The Mechanical World: Descartes and Newton
7. The Mechanical World: Newton and Leibnitz
8. The Development of Probability Theory
9. Euler and Gauss
10. The Age of Rigor
11. Transition to the 20th Century
12. Women and Mathematics

Text

The History of Mathematics, David M. Burton, Seventh Edition, ISBN 978-0-07-338315-6.

The price of this book is outlandishly high, but it is available for a free download at <https://jontalle.web.engr.illinois.edu/uploads/298/HistoryMath-Burton.85.pdf>

Regular Class Meetings

Each class will begin with a quiz based on the last week's readings. The quiz grade will be included in the class meeting grade for the date on which the homework is submitted and due.

Missing a class means missing a quiz. The quiz cannot be made up.

Tests

There will be two in class tests. The tests will have three or four prompts. Undergraduates will reply to one; those taking for graduate credit will reply to two.

While this is a mathematics class and not an English Composition class, the tests should be legible and well written enough that the instructor does not have to puzzle out the meaning of what is said. Thoughts should be organized logically into sentences and paragraphs.

Spelling or grammatical errors will not reduce the grade, so long as the meaning of the paper is not confused by the errors. However, errors will be marked.

Final Exam

The final exam will be a book report on a book from the following list. Those marked with an asterisk are for undergraduates only. Those taking the course for graduate credit should select a book without an asterisk.

Thales of Miletus	Patricia O'Grady	More detailed account of Thales and his philosophy
Early Greek Thought: Before the Dawn	James Luchte	
Meno	Plato	Knowledge and learning
*The Ancient Engineers	L Sprague de Camp	Engineering account of building pyramids, etc. Somewhat dated.
Dialogue Concerning the Two Chief World Systems	Galileo	
Galileo and the Science Deniers	Mario Livio	Most recent biography
Descartes: The Life and times of a Genius.	A. C. Grayling	
*Descartes' Bones.	Russell Shorto	Descartes' influence
Never at Rest-A Biography of Isaac Newton	Richard S. Westfall	Sir Isaac Newton
*The Baroque Cycle	Neal Stephenson	Leibniz/Newton/more. Three volumes.
Banneker, The Afro-American Astronomer	Will Allen	
The Man Who Knew Infinity	Robert Kanigel	Ramanujan
The Universal Computer: The Road from Leibniz to Turing.	Martin Davis	Leibniz and Turing
The Imitation Game	Jim Ottaviani Leland Purvis	Alan Turing. The book is more informative than the movie.
Hidden Figures	Margot Lee Shetterly	Better than the movie.
The 480: A Novel of Politics	Eugene Burdick	Computers, statistics, and political campaigning

Also, <https://www.biblicalarchaeology.org/daily/biblical-sites-places/biblical-archaeology-places/the-a>
 J. Harold Ellens, History of the library at Alexandria, a little more detailed than the history in the book.

Grade

Your final course grade will be determined as follows:

Class meeting grade average	20% of final grade
Test I	30% of final grade
Test II	30% of final grade
Final Book Report	20% of final grade

Letter grade computation:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

Graduate Students

The standards for graduate students in the course are higher than the standards for undergraduates. The course will include more advanced work for graduate students. In class work will be more advanced and there will be additional questions on the tests.

Day of Mid-term test: Thursday, October 5, 2023

Day of End-term test: Thursday, November 30, 2023

DSS Accessibility Statement

UAB is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services for information on accommodations, registration and procedures. Requests for reasonable accommodations involve an interactive process and consist of a collaborative effort among the student, DSS, faculty and staff.

If you are registered with Disability Support Services, please contact DSS to discuss accommodations that may be necessary in this course. If you have a disability but have not contacted Disability Support Services, please call 934-4205 or visit <http://www.uab.edu/dss> or Hill Student Center Suite 409.

Title IX Statement

The University of Alabama at Birmingham is committed to providing an environment that is free from sexual misconduct, which includes gender-based assault, harassment, exploitation, dating and domestic violence, stalking, as well as discrimination based on sex, sexual orientation, gender identity, and gender expression. If you have experienced any of the aforementioned conduct we encourage you to report the incident. UAB provides several avenues for reporting.

For more information about Title IX, policy, reporting, protections, resources and supports, please visit <http://www.uab.edu/titleix> for UAB's Title IX Policy,

UAB's Equal Opportunity, Anti- Harassment Policy and Duty to Report and Non-Retaliation Policy.