

Math 3010 – 1 Topics: History of Mathematics January 31, 2017

Credit Hours: Three

Meeting Time: MWF, 2:00 – 2:50 AM in CSC 10 – 12
Homepage: <http://www.math.utah.edu/~treiberg/M3010.html>

Instructor: Prof. A. Treibergs, JWB 224, 581 – 8350.
Office Hours: MWF 12:45 – 1:45 PM (tent.) & by appt.
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Prerequisites: "C" or better in (MATH 1210 OR MATH 1250 OR MATH 1270 OR
MATH 1310 OR MATH 1311 OR MATH 1220 OR MATH 1320 OR
MATH 1321 OR MATH 2210) OR AP Calculus AB score of at
least 4 OR AP Calculus BC score of at least 3.

Text: John Stilwell, Mathematics and its History, 3rd. ed.,
Springer, 20110. ISBN: 978–1–4419–6052–8

Course Description:

In this one semester course in the history of mathematics. It will develop mathematical ideas and put them in historical context. As it is a writing intensive course, you will be writing three term papers on different periods of mathematics history.

Topics:

We will follow the text and try to cover as many topics as time allows.

1. Pythagoras and Greek Geometry.
2. Greek Number Theory.
3. Number Theory in India and China.
4. Polynomial Equations
5. Analytic Geometry.
6. Projective Geometry
7. Calculus & Infinite Series.
8. Fermat, Abel & Jacobi.
9. Mechanics.
10. Complex Numbers.
11. Differential Geometry.
12. Group Theory.
13. Algebraic Geometry.
14. Topology.
15. Logic and Combinatorics.

Expected Learning Outcomes:

Upon successful completion of Math 3010 – History of Mathematics, students will be able to: describe the sequence of mathematical discoveries and developments of major mathematical ideas. They will be able to relate these ideas to their historical and geographical context. They will grasp the mathematics with enough mastery to explain it to someone else. Students will develop writing skills. This includes not only the mechanics of assembling a research paper, collecting reference materials, formulating the thesis, organizing by outlining and writing in good style, but also making a mathematical argument with both precision and rigor.

Teaching and Learning Methods:

Material will be presented in lectures and read from the text and other sources. Students will solidify their learning by solving problems assigned weekly. They will explore topics of their choice more deeply by writing three term papers. Students will ask questions and present solutions in regular classroom discussions. Students may benefit from one-on-one instruction by consulting the instructor during office hours.

Evaluation Methods and Grading

Homework: To be assigned weekly.

Homework and papers will be due Fridays and will be collected in class. HW papers turned into the graders ??? mailbox in the math mail room (JWB 228) by ??? PM Fridays before he leaves will be regarded as being turned in on time. Homework that is late but not more than one week late will receive half credit. Homework that is more than one week late will receive no credit at all.

Exams: Exams will be closed book except that you may to bring a "cheat sheet," an 8.5" x 11" piece of paper with notes on both sides. Your text, notes, homework papers, calculators laptops, tablets, phones, text messaging devices, and other books will not be allowed.

Midterms: There will be two in-class one-hour midterm exams on Wednesdays Feb. 7, Mar. 28.

Final Exam: Tue., May 1, 1:00 – 3:00 pm. Half of the final will be devoted to material covered after the second midterm exam. The other half will be comprehensive. Students must take the final to pass the course.

Course grade: Two midterms 30% + HW 20% + term papers 30% + final 20%. Grades will be assigned "on the curve."

Withdrawals: Last day to register is Jan.12. Last day to drop class is Jan 19. Until Mar. 2 you can withdraw from class with no approval at all. After that date you must petition your dean's office to be allowed to withdraw.

ADA: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All information in this course can be made available in alternate format with prior notification to the Center for Disability Services (www.hr.utah.edu/oeo/ada/guide/faculty/)

Faculty and Student Responsibilities:

All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to the Faculty Rules and Regulations, it is faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. Faculty must strive in the classroom to maintain a climate conducive to thinking and learning (PPM 6-316). Students have a right to support and assistance from the University in maintaining a climate conducive to thinking and learning (PPM 6-400).

Note: The syllabus is not a binding legal contract. It may be modified by the instructor when the student is given reasonable notice of the modification.