Syllabus MAT 593 Fall 2018

Contact Information:

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Class: MW 2:15-3:35, 110 Carnegie

Course Description:

MAT 593 History of Mathematics 3 IR Mathematical concepts in their historical perspective. Character and contributions of the great mathematicians and relation of mathematics to other sciences. Prereq: 12 credits of calculus and at least two 500-level mathematics courses.

Textbook: A History of Mathematics: An Introduction, 3rd Ed. *Katz*. Pearson. ISBN 9780321387004

Course Objectives:

The history of mathematics is a vast subject, and it is impossible to cover all of it in a single semester. We shall concentrate on the period extending from ancient Greek times through the period just before Newton and Leibniz, trusting that subsequent developments will be somewhat familiar to students through their other mathematical studies.

After successfully completing this course, students should be able to:

- Summarize the contributions of the major mathematical schools in distinct historical eras and geo-political regions
- Trace the historical development of key mathematical ideas
- Outline the contributions and life events of key individual mathematicians
- Frame mathematical developments within the larger context of historical events
- Discuss the interaction between mathematical cultures in different regions and eras

Homework: Written homework will be assigned and collected regularly. You will get the greatest benefit from homework by working on your own. If you must use someone else's ideas, you must include an appropriate citation with your work – not to do so is a violation of academic integrity. Do not mine the internet for homework answers. You don't learn mathematics by watching someone else do it any more than you learn to play the violin by going to a concert.

Grading: Your final grade is based on homework (20%), 2 in-class tests (25% each) and a final exam (30%).

Tests:

- Test 1: Wednesday, October 3
- Test 2: Wednesday, October 31

Tests last 1 hour during the regularly scheduled class time and in the normal classroom.

Final Exam: Friday, December 14, 5:15-7:15 pm (place TBA)

Students with Disabilities: If you believe that you need academic adjustments (accommodations) for a disability, please contact the Office of Disability Services (ODS), http://disabilityservices.syr.edu, located in Room 309 of 804 University Avenue, or call (315) 443-4498 or TDD: (315) 443-1371 for an appointment to discuss your needs and the process for requesting academic adjustments. ODS is responsible for coordinating disability-related academic adjustments and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since academic adjustments may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.

Academic Integrity: Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice.The Violation and Sanction Classification Rubric establishes recommended guidelines for the determination of grade penalties by faculty and instructors, while also giving them discretion to select the grade penalty they believe most suitable, including course failure, regardless of violation level. Any established violation in this

course may result in course failure regardless of violation level. For more information and the complete policy, see http://class.syr.edu/academic-integrity/

Religious observances policy: Syracuse University's Religious Observances Policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors no later than the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice (Student Services -> Enrollment -> My Religious Observances) from the first day of class until the end of the second week of class

Other Resources:

- *A History of Mathematics,* by Jeff Suzuki, Prentice Hall, Upper Saddle River, N.J., 2002.

  I used Suzuki's book the first time I taught the course. It is laid out in approximately chronological order and includes material on Egyptian and Babylonian mathematics (which our textbook lacks.) It is a rather difficult book because it relies on source material (in translation!) to a greater extent than other texts.

- *A History of Mathematics, 3rd Edition* by Victor J. Katz, Addison Wesley, Boston, 2009.

  I have also taught from this book. It is also presented in roughly chronological order. It has a rich collection of problems, some of them quite difficult.

- *An Introduction to the History of Mathematics 6th Edition*, by Howard Eves, Thomson, Pacific Grove, California, 1990.

  More thematically organized than the other texts. It has a wonderful section on the history of the number pi. Related problems are grouped into projects.

- *The Historical Development of the Calculus,* by C.H. Edwards, Jr., Springer, New York, 1979.

  A wonderful little book - highly recommended - but too narrowly focused on the calculus to serve as the primary textbook for a history course.

- The History Guide (web site)

  European centric, but includes a very valuable set of lectures on ancient and medieval history for those of us (like me) who never took a history course in college.

- Audio lectures on topics in History of Math (From the BBC)