Course Outline: Math 3510, Fall 08

The web page for this course can be found at **http://livetoad.org/**. Please check there frequently for announcements, changes, due dates, solutions, scores, and other goodies.

Labor Day	Mon	1	Sep
Exam 1	Thu	16	Oct
Fall Break	Mon–Tue	20–21	Oct
Last Day to Withdraw	Fri	31	Oct
Veterans Day	Tue	11	Nov
Thanksgiving Break	Wed–Fri	26–28	Nov
Exam 2	Fri	19	Dec, 12:30–2:30

Introduction

Welcome to History of Math! In this course we will look at the development of mathematical ideas; the evolution of mathematical philosophy and its influence on education; and the political and social context for these developments. The first half of the class will be a sweeping, global overview of 4000 years of mathematical history. The second half will look in depth at a few specific subjects.

Office hours

My office is UH 4080e. The phone number is 419 530 2975. My email address is simply paul.hewitt, at utoledo.edu. I will be in my office for a half hour before and after each class. At these times you can call or stop by without an appointment. I am also available at other times, but for these you must make an appointment. Feel free to ask for appointments at other times if you cannot make it to my regular office hours. If you call me when I am not in my office then you can leave a voice mail message and I will get back to you as soon as I can.

Text and other resources

We will use two books. The first was written primarily with teachers in mind: *Math through the Ages* (expanded edition), by W Berlinghoff and F Gouvêa. It begins with a quick overview of mathematical history, with primary emphasis on western culture. The main part of the book is a series of short sketches of important mathematical developments.

The second is not strictly a history book, but delves more deeply into the development of important mathematical ideas: *Yearning for the Impossible*, by John Stillwell. We will use this text in the second half of the course, as a guide for an even more in-depth look at the history of three topics: equations, geometry, and computation.

Other resources:

- MacTutor: `http://www-history.mcs.st-and.ac.uk`

- Wikipedia: `http://wikipedia.org`

- V Katz, *A History of Mathematics*, Addison-Wesley, 1998.

- V Katz, *Using History to Teach Mathematics*, Math Assoc of America, 2000.

- GG Joseph, *The Crest of the Peacock*, Princeton Univ Press, 2000.

There is also a section "What to read next" at the end of *Math through the Ages*.

Quizzes

There will be a short, 5-point quiz nearly every day, based on reading assignments which I will post on the web. Your 20 best quiz scores will count towards your final grade. I will not give make-up quizzes under any circumstances. If you miss a quiz then that will be one of the scores you drop.

Exercises

There will be 13 exercise sets. Some of these will be taken from the text; some will appear in supplementary lecture notes. I will post the problems and due dates. Each problem will earn 0 points if your proof or calculation is mathematically incorrect; 1 point if it is correct, but not well-written; 2 points if it is correct and well-written. You may earn up to 100 points total for your work on the assignments.

Thus, your scores will not depend solely on your answer, but on the clarity and accuracy of your explanations. In fact, the answers you typically find "in the back of the book" are usually far too sketchy to earn you any points as written. You will not get credit for a solution if you are vague or if you omit important details.

Before you turn in you homework, fold the papers lengthwise and write on the outside

your name, Math 3510, Fall 08, *assignment number*, *due date*

Research projects

I will also assign several research projects from the text, each worth up to 20 points. These points will be added to your total for the exercises, again up to a maximum of 100 for the semester. You may work in pairs, but then you will split the points earned.

You will be required to present your results to the class, but you will not have to submit any written form, apart from a detailed, annotated list of references. Your grade on these projects will depend on both the thoroughness of your research and also the organization and liveliness of your presentation to the class. In particular, your grade will depend on how well you generate a class discussion, and how well you handle questions from me and your classmates.

Plagiarism

I encourage you to work together. Studies show that students who work together consistently out-perform those who do not. However, your own work must be written in your own words. Do not "divide up the labor". Do not turn in work that is not your own. Copying is cheating. This includes copying from another student or copying from a book. If you turn in work that is not your own then you will get a 0 on that assignment. If it happens a second time you will get an F in the course.

Exams

There will be two exams, worth 100 points each. The exam dates are listed on the calendar above. The exam questions will be derived from three sources: the quiz questions, possibly in modified form; the homework exercises; and the research reports. On each exam you will have some choice in the problems you wish to do.

I will give make-up exams only in case of a documented exigency, such as illness or a funeral. If you are sick the day of the exam then you must call or email that same day if you expect to be able to make up the exam. Otherwise you must arrange for a make-up exam ahead of time. If I am not in my office then you can leave a voice mail message. If you fail to show up for an exam and do not contact me about it until afterwards then you will not be able to make up that exam — you will get a 0 for that exam.

Grades

Your final grade will be determined from the distribution of total points earned, based on the following scale:

90% earns an A; 80–89% earns a B; 70–79% earns a C; 60–69% earns a D.

If you want me to post your scores under a nickname then on your quiz card write your name, an email address, and the nickname you want to use — preferably something not obvious! I will not accept email requests to email or post your scores or final grade. If you want me to post your scores then you must write the above information on your quiz card.

Faculty can no longer give an IW grade. If you are still registered after the 10th week you will get a grade in this course, whether or not you have stopped attending.