

Course Outline: Math 3510, Fall 2012

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. This is fun stuff.

Course info will be posted on the UT BlackBoard site. You can find this under My Courses at the UT web portal <https://myut.utoledo.edu/>. Much of the same material can also be found at <http://livetoad.org/>. Please check frequently for announcements, changes, due dates, solutions, scores, and other goodies.

<i>Labor Day</i>	Mon	3 Sep	
<i>No class!</i>	Fri	28 Sep	
<i>Fall Break</i>	Mon–Tue	1–2 Oct	
Class meets at TMA	Wed	3 Oct	9:00–10:30 am
Exam 1: Chapters 1–3	Mon	8 Oct	<i>note the change of date!</i>
Research proposal and bibliography due	Fri	26 Oct	
<i>Last Day to Withdraw</i>	Fri	26 Oct	
<i>Veteran's Day</i>	Mon	12 Nov	
Exam 2: Chapters 4–6	Mon	19 Nov	
<i>Thanksgiving</i>	Wed–Fri	21–23 Nov	
Research paper due	Mon	26 Nov	
Exam 3: Chapters 7–9	Wed	12 Dec	12:30–2:30 pm

Note that class will meet at the **Toledo Museum of Art on Wednesday, 3 October**, 9:00–10:30am, and will not meet at all on Friday, 28 September. If this poses a schedule conflict for you then you need to let me know *immediately* so that I can make special accommodations for you.

Office hours

I will be in UH 4080c for at least an hour after each class. The phone there is 419 530 2975. At these times you can call or stop by without an appointment. Feel free to ask for appointments at other times if you cannot make it to my regular office hours. My email address is simply paul.hewitt@utoledo.edu, which is often the best way to contact me. 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 follow the book *Yearning for the Impossible*, by John Stillwell. This is not strictly a history book, but it does explore the historical development of important mathematical ideas in considerable depth.

Other resources:

- *Mathematics and Its History* (second edition), by John Stillwell. This *is* a math history book by the same author. It offers further historical and mathematical insight into the topics we will cover. However Stillwell is not a historian and you should compare and contrast his treatment with those of other authors.
- *Math through the Ages* (expanded edition), by W Berlinghoff and F Gouvêa. They begin 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. For further resources look at the section “What to read next” at the end of the book.
- GG Joseph, *The Crest of the Peacock*, Princeton Univ Press, 2000. This is focused on the nonwestern roots of much of our mathematics. It provides much needed balance to western treatments of the history of mathematics.

- MacTutor: <http://www-history.mcs.st-and.ac.uk>. This is by far the best online resource for the history of mathematics. There are biographies, mathematical topics, maps, and indexes organized by topic, chronology, or geography.
- Wikipedia: <http://wikipedia.org>. This is a great starting point for research, but use the information there with caution. Always verify the information with an independent resource.

Quizzes

There will be a short, 5-point quiz nearly every day, based on reading assignments which I will post on the web. I will give make-up quizzes only in case of a documented exigency, such as illness or a funeral. If you are sick the day of a quiz then you must call or email that same day if you expect to be able to make up the quiz. Otherwise you must arrange for a make-up quiz 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 quiz and do not contact me about it until afterwards then you will not be able to make up that quiz — you will get a 0 for that quiz.

The quizzes will segue into the class discussions, which are an integral part of the course. You may receive up to 2 bonus points on the quiz if I call on you during the class discussion to justify your answers. I will be looking not for the “correct” response but an indication that you have read the assigned reading thoroughly and can back up your quiz answers based on your reading.

Conversely I will deduct points from your quiz if you arrive late or leave early, or if you are rude or disruptive. I consider cell phone use during class extremely rude.

Assignments

There will be several homework assignments. I will post the problems and due dates as the semester progresses. Each problem will earn 0 points if your proof or calculation is mathematically incorrect; 2 points if it is correct, but not well-written; 4 points if it is correct and well-written. After I grade your assignments you will have the opportunity to rewrite your solutions to improve the exposition in order to earn the full 4 points. You must turn in your assignments on time in order to be able to rewrite your solutions for extra points.

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 2012, assignment number, due date

Research paper

You have the option to do one research paper, worth 100 points, in the form of a 10000-word paper, including an annotated bibliography. Your grade on the paper will depend on the thoroughness of your research, and the detail and clarity of your written exposition, including the bibliography. If you intend to do a research paper then you must submit a proposed topic and a first draft of an annotated bibliography by Friday, 26 October.

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 or website. If you turn in work that is not your own then you will get a 0 on that exam or assignment. If it happens a second time you will get an F in the course.

Exams

There will be three exams, worth 100 points each. The exam dates are listed on the calendar above. Some of the exam questions will be multiple choice; some will be computational; some will require answers in complete sentences.

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 your total points earned, based on the following scale:

- 300 points earns an A
- 270 points earns a B
- 240 points earns a C
- 210 points earns a D.

I expect to stick to this scale rather rigidly: 299 points will probably earn an A-.

Clearly there are many paths to 300 points. Perfect scores on the three exams is one path, but there are others. The research paper is worth up to 100 points. There will also be as many as 300 points to earn on the quizzes and homework assignments. I expect that everyone can find their way to an A.

Scores and final grades will be posted on the UT BlackBoard page for this class.

Faculty cannot give an withdrawal. If you are still registered after the 10th week you will get a grade in this course, whether or not you have stopped attending.