

**History of Mathematics
MAT 4930
SPRING 20**

Classroom: LIT 221

Instructor: Dr. Konstantina Christododouloupoulou

Office Location: 365 LIT

Office Hours: M3, W6, R4, and by appointment.

Open Door Policy: You are welcome to drop by to discuss any aspect of the course, anytime.

All course materials will be posted in e-Learning CANVAS <https://lss.at.ufl.edu>

Meeting Times: MWF 4

Office Phone: (352) 294- 2315

Email: kchristod@ufl.edu

Text: *Mathematics and Its History*, by John Stillwell. The book is available online through the UF library. We will cover most topics from Chapters 1-14, plus additional material, time permitting.

In addition, we will use the following online resource (browse to become familiar with the many biographies and mathematics topics available at this website):

The MacTutor History of Mathematics Archives (University of St Andrews)

Course content and objectives: The goal is to expose students to the historical development of mathematical ideas, over time and across cultures, and to acquaint them with some of the basic techniques, as they were historically developed. We will emphasize primarily the mathematics that influenced the development of algebra, geometry, calculus, and (if time permits) we will look into selected topics from contemporary mathematics. This course should also allow students to create a cohesive picture of mathematics, develop an understanding of the global nature of mathematical culture, and the importance of cultural interactions in mathematical history; and reflect on contemporary mathematical culture, their place in it, and their mathematical values.

Reading: A tentative course calendar (subject to revision during the semester) and the required readings is available in the course homepage in CANVAS. There you can find which sections will be covered during each lecture. *It is expected that you have read the relevant readings before each lecture, so that you will be able to better grasp the material presented.*

Office Hours: I encourage you to take advantage of my office hours and my **open door** policy. You are welcome to drop by my office to talk about the course anytime I am in my office and my door is open. In addition, I will hold regular office hours for your convenience. If you cannot make my posted hours I will also be happy to set a meeting time that is convenient for the both of us.

Course Web Page: I will update CANVAS regularly with class announcements, homework assignments, and additional materials. All grades are posted in the Canvas gradebook. You are responsible for verifying that those grades are accurate. **You have one week after a score has been posted to contact me to resolve any grade concerns. We will not consider any grading disputes nor make any grade adjustments at the end of the semester. Be sure to save all original documents in case of grading questions.**

Grading:

In Class Activities	5%
Homework	25%
Course Project	15%
Midterm	25%
Final Exam	30%

The following grading scale applies.

A	$\geq 90\%$	C	$\geq 70\%$
A–	$\geq 87\%$	C–	$\geq 67\%$
B+	$\geq 84\%$	D+	$\geq 64\%$
B	$\geq 80\%$	D	$\geq 60\%$
B–	$\geq 77\%$	D–	$\geq 56\%$
C+	$\geq 74\%$	E	$< 56\%$

Homework: Homework will be assigned regularly and it will consist of reading assignments and mathematical exercises. It is expected that you complete the reading assignments by the next class meeting (unless otherwise specified). In the exercises you will be asked to solve problems using methods or notation of historical periods. Each proof or problem will be graded on the following scale:

5	Correct mathematical proof and very well written
4	Small mathematical errors and/or grammatical errors
3	Contains good ideas, but overall an incorrect mathematical proof
2	Significant mathematical errors
1	Come and see me for help!

If you receive a grade ≤ 4 on any proof, you may turn that proof in again for an entirely new grade. I will keep only the highest score. Rewrites are due exactly one week from when I return homework. You may work with your peers to prepare problems but you must write up solutions individually. Do not turn in what are essentially Xerox copies of each other's homework. **No late homework will be accepted.**

Submitted work expectations: Submitted assignments should be neat, organized, and clearly presented. Homework must be on letter-size paper only and papers with multiple pages should be stapled. Papers not meeting these standards may have the scores reduced or may be returned ungraded.

Excused absences are consistent with university policies in the undergraduate catalog <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx> and require appropriate documentation.

Course Project: You will choose a topic and complete a major project related to the history of mathematics during the course of the semester. This will be a written project of length 10-15 pages (without cover sheet or references), with 1 inch margins, 12pt Times New Roman font, double spaced. The main requirement is that your project must involve a "great idea" or a "great theorem" of mathematics and provide a well-supported argument justifying this choice of topic. All projects are expected to be well-written, free from grammatical errors, and have excellent mathematical depth and style. More details and a grading rubric will be provided early in the semester. For this project you may work in groups of up to 4 members.

- You should direct a significant portion of your project toward a general university audience and articulate clearly which sections are aimed toward experts.
- You will turn in a first version of your project for peer review; the first version must be a complete project that you will revise substantially to create your final version.

Time permitting, during the last weeks of classes each group will give a short presentation of their course project.

Exams: A midterm exam and a cumulative final exam are scheduled for this course. The midterm exam is tentatively scheduled for Friday, February 21, in class, and the final exam is scheduled for Wednesday, April 29, 3-5PM in LIT221. Both exams will have a mixture of mathematical exercises and short answer historical questions. **The exams cannot be rescheduled unless you meet the University requirements; see <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.** Absolutely no collaboration on exams is allowed.

Make-up policy: You may arrange to make-up a missed exam for excused absences. Acceptable absences include but are not limited to the following: you are participating in a UF-sponsored event and provide me with documentation at least a week in advance; you were verifiably ill during the exam and notified me within 24 hours of its conclusion; you are observing a religious holiday and have notified me of this during the first two weeks of classes; you have a court-ordered obligation and have provided me documentation a week in advance. Please note that "I just didn't feel well" without documentation, travel plans, and personal schedule conflicts are NOT excused.

Class guidelines: It is expected that everyone in our class will act in a respectful manner:

- Please be respectful of your classmates and me while in class or office hours.
- I expect that you are committed to learning and will not miss class. Arriving late (after we have started class) or leaving early is disruptive and disrespectful. If however, you cannot avoid it, please arrange it in advance with me.
- Turn off all cell phones before the start of class.
- Laptops are not to be used in class.

Students with disabilities: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Academic honesty: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor

and integrity by abiding by the Honor Code." On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor in this class.

In addition, we remind you that *lectures and the course materials given in this class are the property of the University/faculty member and may not be taped/shared without prior permission from the lecturer and may not be used for any commercial purpose. Students found to be in violation may be subject to discipline under the Student Conduct Code.*

Online Course Evaluation: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or <https://viaufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students <https://atgatorevals.aa.ufl.edu/public-results/>.

Tips for the Course:

- *Mathematics is not a spectator sport.* Your participation and engagement with the material is essential.
- Discuss the topics with your classmates.
- Take advantage of my office hours. This time is set aside for us to help you.
- Don't hesitate to ask questions in class.
- Be reminded that 2 student hours devoted to assignments and preparation for every hour of classroom time is a reasonable expectation for an average student.
- Barring unforeseen medical or other serious conditions, I expect you to be in class on time every day. If you must miss a class, please let me know as soon as possible and be sure to contact a classmate to find out what you missed.
- If you are in trouble see me immediately. If you think you are in danger of failing (or of getting a grade that you do not want) you should see me immediately. I will not give you an extra credit assignment or an incomplete to help you avoid failing, but I can make recommendations regarding drops, study habits, test taking skills, future courses, etc.

Campus Resources:

Health and Wellness U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit <https://umatter.ufl.edu/> to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit <https://counseling.ufl.edu/> or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit <https://shcc.ufl.edu/>.

University Police Department: Visit <https://police.ufl.edu/> or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center|: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608;<https://ufhealth.org/emergency-room-trauma-center>.

This syllabus is subject to change. You will be notified if any changes are made. Version 1

SPRING 2020 –MAT 4930 History of Mathematics Calendar

The actual pace of the course may be slightly different than listed in the syllabus below. It will depend on the students' response to the material. Individual homework assignments and in- class group-work will be given every week. **Please check CANVAS for updates on a weekly basis.**

	Topic
Week 1	The history of number systems Babylonian mathematics
Week 2	Egyptian mathematics The Theorem of Pythagoras (Chapter 1)
Week 3	Greek Geometry (Chapter 2)
Week 4	Greek Number theory (Chapter 3) Infinity in Greek Mathematics (Chapter 4)
Week 5	Number Theory in Asia (Chapter 5)
Week 6	Polynomial Equations (Chapter 6) Course Project Proposal Due
Week 7	Catch-up/Review/Midterm Exam
Week 8	Analytic Geometry (Chapter 7)
Week 9	HAPPY SPRING BREAK
Week 10	Calculus (Chapter 9)
Week 11	Infinite Series (Chapter 10)
Week 12	The Number Theory Revival (Chapter 11) Peer Edit Day: First Version of Course Project Due
Week 13	Complex Numbers in Algebra (14.1-14.3)
Week 14	Selected topics from Chapters 18-25
Week 15	Selected topics from Chapters 18-25 Review/Catch-up/Class Presentations (If time)
Week 16	Class Presentations (If time) Final Version of Course Project Due

Midterm Exam-Friday, February 21

Cumulative Final Exam-Wednesday, April 29, 3-5PM