

**History of Mathematics**  
**MAT 4930**  
**SPRING 2021**

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**Course Instructor:** Dr. Konstantina Christodouloupoulou

**Lectures:** Class meetings are on MWF4 (10:40-11:30am) in LIT207 (Section 16591) and in Zoom Conferences in Canvas (Section 30322).

**Online Office Hours in Zoom:** M3, W6, R4 and by appointment

You can find the Zoom link for the office hours on Canvas. You must sign in your UF Zoom account to attend lectures and office hours.

**Email:** kchristod@ufl.edu

All course materials will be posted in eLearning Canvas, <http://elearning.ufl.edu/>.

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**Text:** *Mathematics and Its History*, by John Stillwell. The book is available online through the UF Marston Science Library. We will cover 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 of the course 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.

**Class Format:** The class is using the HyFlex method with in-person scheduled class meetings MWF4 (10:40-11:30am) in LIT207 for the students in the face-to-face section 16591 and synchronous online meetings in Zoom Conferences in Canvas for the students in the online section 30322

**Office Hours:** I will hold regular office hours in Zoom 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 grade book. 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.**

**Readings:** A course calendar 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.*

**Course Communications and Technology:** I will be available to assist you via online office hours and review conferences. The preferred way to reach me outside office hours is via Canvas e-mail or direct e-mail. All students are expected to check the course web site on Canvas <http://elearning.ufl.edu> on a daily basis. In addition, I may use your UF e-mail for specific communications and, therefore, you should check it daily as well. You should enable Canvas notifications for this class, so that you are notified immediately about grading, assignment feedback, due date changes, announcements, etc.

**Please review the UF Resources and Policies for available technical assistance, resources and UF policies.**

**You are responsible for having access to a working computer and have your work completed on time.** Complete and submit your work early.

**Minimum technology requirements:** The University of Florida expects students entering an online class to acquire computer hardware and software appropriate to his or her degree program. Most computers are capable of meeting the following general requirements. A student's computer configuration should include:

- Webcam
- Microphone
- Broadband connection to the Internet and related equipment (Cable/DSL modem)

**Zoom:** Zoom is an easy to use video conferencing service available to all UF students, faculty, and staff. You can find resources and help using Zoom at <https://ufl.zoom.us>.

**Grading:**

<b>Homework</b>	25%
<b>Project</b>	20%
<b>Midterm Exam</b>	25%
<b>Final Exam</b>	30%

The following grading scale applies.

A	≥ 90%	C	≥ 70%
A–	≥ 87%	C–	≥ 67%
B+	≥ 84%	D+	≥ 64%
B	≥ 80%	D	≥ 60%
B–	≥ 77%	D–	≥ 56%
C+	≥ 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  $\leq 4$  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. 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.

**Project:** You will choose a topic to research and complete a paper related to the history of mathematics during the course of the semester. The paper should be of length 5-10 pages (without cover sheet or references), with 1 inch margins, 12pt Times New Roman font, double spaced. You may also typeset your paper using LaTeX. The main requirement is that your paper must involve a "great idea" or a "great theorem" of mathematics and provide a well-supported argument justifying this choice of topic. All papers 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 paper toward a general university audience and articulate clearly which sections are aimed toward experts.
- You will turn in a first version of your paper for peer review; the first version must be a complete paper 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 final exam are scheduled for this course and will be proctored by Honorlock. The midterm exam is tentatively scheduled for Friday, February 26, and the final exam is scheduled for Thursday, April 29. 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.

**Honorlock:** Proctoring services are provided by Honorlock. Honorlock is an online proctoring service that allows students to take exams on-demand 24/7. There are no scheduling requirements. You will need a laptop or desktop computer with a webcam, a microphone, and a photo ID. The webcam and microphone can be either integrated or external USB devices. Honorlock requires that you use the Google Chrome browser; furthermore, the Honorlock extension must be added to Chrome.

**Beginning July 1, 2020, Honorlock has updated their minimum system requirements and will no longer support Windows 8, Windows 8.1, Mac OSX 10.11, or Mac OSX 10.12. After July 1, you can find the updated Minimum System Requirements, as well as a system compatibility test, at Honorlock's support page.** Students are expected to review the Honorlock system requirements and use their compatibility tool before the end of the drop/add period by visiting <https://honorlock.com/support/> and scrolling down to the Simple Single-Click Test section of that page. The student guide to testing with Honorlock can be accessed via [https://honorlock.com/wp-content/uploads/2019/09/Canvas\\_Student\\_Guide\\_Accessible.pdf](https://honorlock.com/wp-content/uploads/2019/09/Canvas_Student_Guide_Accessible.pdf). For further information, FAQs, and technical support, please visit Honorlock.

**Make-up policies:** Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: [catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/](http://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/)

Make-up assignments will be allowed in the following cases:

- In case of illness, upon receipt of a doctor's note or equivalent, or by following the procedure outlined here: <https://care.dso.ufl.edu/instructor-notifications>.
- In case of religious holidays, by informing me via e-mail ahead of time.
- In case of military duty, jury duty, participation in academic conferences, or participation in official university or UAA events, by providing appropriate evidence ahead of time.
- In case of family emergencies or other extenuating circumstances, by following the procedure outlined here: <https://care.dso.ufl.edu/instructor-notifications>.

In all other cases, or if you are unsure, please e-mail me as soon as feasible. Absences are generally not excused for non-emergency travel and personal schedule conflicts. Students are still responsible for turning assignments in on time unless an extension has been requested via e-mail and approved by the instructor prior to the deadline. In case of true documented emergencies, the instructor may waive this requirement.

**One-week policy:** All grades are posted in the CANVAS Gradebook. You are responsible for verifying all grades are accurate. You have one week after a score is available to discuss any grade concerns with me. There is no grades dispute after one week.

**Incomplete:** A student who has completed a major portion of the course with a passing grade but is unable to complete the final exam or other course requirements due to illness or emergency may be granted an incomplete, indicated by a grade of "I". This allows the student to complete the course within the first six weeks of the following semester. You must contact me before finals week to sign an incomplete grade contract (<http://clas.ufl.edu/forms/incomplete-grade-contract.pdf>), and must provide documentation of the extenuating circumstances preventing you from taking the final exam. The grade of "I" is never used to avoid an undesirable grade, and does not allow a student to

redo work already graded or to retake the course. See the official policy at <http://www.math.ufl.edu/departments/incomplete-grades/>.

**Class Policies for Students enrolled in the in-person section:** We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.
- This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.
- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
- Follow your instructor's guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.
- If you are experiencing COVID-19 symptoms (Click here for guidance from the CDC on symptoms of coronavirus), please use the UF Health screening system and follow the instructions on whether you are able to attend class. Click here for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms.
  - Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. Find more information in the university attendance policies.

**Privacy Statement for Online Classes:** Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

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 Honor Code.*

**Students with Disabilities:** Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. Click here to get started with the Disability Resource Center. 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.

**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/>.

**Diversity Statement:** I am committed to diversity and inclusion of all students in this course. I acknowledge, respect, and value the diverse nature, background and perspective of students and believe that it furthers academic achievements. It is my intent to present materials and activities that are respectful of diversity: race, color, creed, gender, gender identity, sexual orientation, age, religious status, national origin, ethnicity, disability, socioeconomic status, and any other distinguishing qualities.

### **Campus Resources:**

#### **Health and Wellness**

*U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto: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>.

#### **Academic Resources**

*E-learning technical support:* Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

*Career Connections Center:* Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

*Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.*

*Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.*

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

### 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. Homework assignments and readings will be given every week. Handouts, Lecture Notes, etc. are posted in Canvas. Below we will denote by: Stillwell = Mathematics and Its History, MTM = [The MacTutor History of Mathematics Archives](#). **Please check CANVAS for updates on a weekly basis.**

	Topics	Readings/Assignments
<b>Week 1</b>	Ancient Arithmetic Babylonian mathematics	MTM: Overview of the history of mathematics MTM: Babylonian Mathematics Homework 1
<b>Week 2</b>	Egyptian mathematics The Theorem of Pythagoras	MTM: Egyptian Mathematics Stillwell: Chapter 1 Handout: Ancient Arithmetic Homework 2
<b>Week 3</b>	Greek Geometry	MTM: Biography of Pythagoras Stillwell: Chapter 2 Homework 3
<b>Week 4</b>	Greek Number theory Infinity in Greek Mathematics	MTM: How do we know about Greek Mathematics? Stillwell: Chapters 3-4 Homework 4
<b>Week 5</b>	Number Theory in Asia	MTM: An overview of Arabic Mathematics Stillwell: Chapter 5 Homework 5 Course Project Proposal Due
<b>Week 6</b>	Polynomial Equations	Stillwell: 6.1-6.3, 11.1, 14.1-14.3 MTM: Cardano, Tartaglia Homework 6
<b>Week 7</b>	Polynomial Equations/Review/Midterm Exam	Stillwell: 6.5-6.8 MTM: Abel, Galois Midterm Exam
<b>Week 8</b>	Calculus (Chapter 9)	Stillwell: Chapter 9 MTM: Wallis, Newton, Leibniz Homework 7
<b>Week 9</b>	Infinite Series (Chapter 10)	Stillwell: 10.1, 10.2, 10.4, 10.8 MTM: Euler Draft Version of Course Project Due
<b>Week 10</b>	The Number Theory Revival (Chapter 11)	Stillwell: Chapter 11/Homework 8
<b>Week 11</b>	Selected topics from Chapters 18-25 Peer Edit Day	Stillwell: 18.1, 19.1, 20.1-20.6/Homework 9
<b>Week 12</b>	Selected topics from Chapters 18-25 (time permitting)	Stillwell: 22.1, 22.2, 24.1, 24.2/Homework 10
<b>Week 13</b>	Selected topics from Chapters 18-25 (time permitting)	Stillwell: 25.1, 25.2
<b>Week 14</b>	Catch-up/Class Presentations (time permitting)	
<b>Week 15</b>	Review/Class Presentations (time permitting)	Final Version of Course Project Due

**Midterm Exam-Friday, February 26 (online)**

**Final Exam-Thursday, April 29 (online)**