

Functions and Modeling
MAT 3503
Fall 2023

Classroom: LIT 225

Instructor: Dr. Konstantina Christododouloupoulou

Office Location: LIT 365

Office Hours: M5, W6, F4, 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

Meeting Times: MWF 7

Office Phone: (352) 294-2315

Email: kchristod@ufl.edu

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

Course Content: We will cover selected topics from: functions and relations, sequences, patterns, conic sections, and mathematical modeling, and, if time permits, we will explore functions in other systems (parametric & polar relations and complex numbers). The course will revisit secondary mathematics content with the goal of helping prospective mathematics teachers deepen and broaden their function-related mathematical content knowledge from algebra through calculus.

Course Objectives: In revisiting secondary mathematics content, prospective mathematics teachers will be able to:

- Deepen and broaden function-related mathematical content knowledge from algebra through calculus by exploring relevant topics in an inquiry based learning setting
- Make connections between college mathematics and secondary school mathematics
- Use collaborative learning to develop their communication and leadership skills
- Explore how technology such GeoGebra and Desmos can be used in the mathematics classroom

Textbook: None required. We will use notes and activities written specifically for this course through the UF Teach program. All course materials will be posted in Canvas.

Class Format: A typical class day will consist of part lecture, part group work, and part student presentations and whole class discussions.

Course Web Page: I will update Canvas regularly with class announcements, 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.**

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, 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:

Class Participation	10%
Homework	20%
2 Semester Exams	40%
Project	10%
Final Exam	20%

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: I will regularly assign problems to be handed in by each individual. I expect all solutions to be written in full sentences and grammatically correct. Each problem will be graded on the following scale:

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

Project: The project will serve to pull together various concepts that have been explored in the course. More details will be posted in Canvas.

Submitted work expectations: Submitted work should be neat, organized, and clearly presented. Papers not meeting these standards may have the scores reduced or may be returned ungraded.

Participation: You are expected to participate in class discussions. Therefore, *it is absolutely essential that you attend class*. 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.

I believe that participation during class is crucial, and it constitutes an important avenue for learning. I encourage you to be active in every class session. Class Participation will be evaluated using the rubric below. This Participation Grading Rubric covers expectations for individual contributions in all class discussions and smaller group work and discussions. Note: We understand that we all have different levels of comfort regarding speaking in class. If you have any issues that prohibit you from participating in class, we encourage you to contact us so we can find ways to make participation work for you in this class. Any class missed will not affect your participation grade if you are within your allotted absences.

Participation Grading Rubric

	High Quality	Average	Needs Improvement
Informed: Shows evidence of having done the assigned work (40%)	4 points	3 points	2 points
Thoughtful: Shows evidence of having understood and considered issues raised (30%)	3 points	2 points	1 point
Considerate: Takes the perspective of others into account. (30%)	3 points	2 points	1 point

Exams: Two semester exams and a final exam are scheduled for this course. The midterm exams are scheduled for September 29 and November 3, and the final exam is scheduled by the registrar's office for December 14, 10:00AM-12:00PM. **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.

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 are no grades dispute after one week.

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/

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 submitting assignments 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.

Technical difficulties are not generally an excuse for missing an assessment; students should have contingency plans in case any such issues arise.

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 the final exam to sign an incomplete grade contract (<https://math.ufl.edu/files/incomplete-grade-contract.pdf>) and you 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/departement/incomplete-grades/>.

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/policies/student-honor-code-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://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students here: <https://gatorevals.aa.ufl.edu/public-results/>.

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/>.

Academic Resources

E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at 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 3503 Functions and Modeling Calendar

The actual pace of the course and assignment dates may be slightly different than listed in the weekly calendar below. It will depend on the students' response to the material. Course materials and assignments are posted in Canvas. **Please check CANVAS for updates on a weekly basis.**

	Topic(s) & Assignments
Week 1	Orientation-Course Introduction Math Connections
Week 2	What is a Function? Homework 1
Week 3	A Rigorous Definition of Function Types of Functions Homework 2
Week 4	Rates of Change Homework 3
Week 5	A Further Investigation of Rates of Change Review of Conic Sections Homework 4
Week 6	Conic Sections continued Exam 1
Week 7	Sequences and Triangular Differences
Week 8	Recurrence Relations Homework 5
Week 9	Recurrence Relations continued Functions Defined by Patterns Homework 6
Week 10	Applications/Catch-up/Review Homework 7
Week 11	Regression and Modeling Exam 2
Week 12	Regression and Modeling
Week 13	Catch-up/Exploring Functions in Other Systems (if time) Homework 8
Week 14	Catch-up/Thanksgiving Break
Week 15	Catch-up/ Exploring Functions in Other Systems (if time) Project Due

Exam 1- Friday, September 29 during class (LIT225)

Exam 2- Friday, November 3 during class (LIT225)

Final Exam-December 14 @ 10:00AM-12:00PM (LIT225)