

Functions and Modeling
MAT 3503
Fall 2021

Classroom: MCCA3194

Instructor: Dr. Konstantina Christododouloupoulou

Office Location: LIT 365

Office Hours: M6, W7, 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

Meeting Times: MWF 5

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 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 on 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*. You will be allowed 3 unexcused absences with no penalty. After this point, I reserve the right to drop your final grade by 2% for each additional unexcused absence. 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.

Exams: Two semester exams and a final exam are scheduled for this course. The mid-term exams are scheduled for October 1 and November 5, and the final exam is scheduled for December 15, 3PM-5PM. **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 is 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 or assignment; 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 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/>.

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.a.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.a.ufl.edu/public-results/>.

In-Class Recording: Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. An "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session. Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

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, 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 infor-

mation 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>.

GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website: <https://gatorwell.ufsa.ufl.edu/> or call 352-273-4450.

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.

Disclaimer: *This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected. You will be notified if any changes are made.*

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
Week 16	Catch-up/ Exploring Functions in Other Systems (if time)/Review

Exam 1- October 1

Exam 2-November 5

Final Exam-December 15 @ 3PM-5PM