

**Functions and Modeling**  
**MAT 3503**  
**Fall 2024**

---

**Classroom:** LIT 223

**Instructor:** Dr. Konstantina Christododouloupoulou

**Office Location:** LIT 365

**Office Hours:** M6, W7, 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 5

**Office Phone:** (352) 294-2350

**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 and Learning Outcomes:** In revisiting secondary mathematics content, prospective mathematics teachers will be able to:

- Apply function-related mathematical content knowledge from algebra through calculus by examining relevant topics in an inquiry based learning setting.
- Identify connections between college mathematics and secondary school mathematics.
- Apply collaborative learning to develop their communication and leadership skills.
- Use technology such as GeoGebra and Desmos 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 in Canvas:** 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.

**Grading:**

<b>Attendance &amp; Participation</b>	10%
<b>Homework</b>	20%
<b>2 Semester Exams</b>	40% (20% each)
<b>Project</b>	10%
<b>Final Exam</b>	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:

<b>5</b>	Correct mathematical solution and very well written
<b>4</b>	Small mathematical errors and/or grammatical errors
<b>3</b>	Contains good ideas, but overall an incorrect mathematical solution
<b>2</b>	Significant mathematical errors
<b>1</b>	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.

**Attendance & Participation:** You are expected to participate in class discussions. Therefore, *it is absolutely essential that you attend class*. Participation during class is crucial, and it constitutes an important avenue for learning. I encourage you to be active in every class session.

In-class discussions and/or activities will be assigned throughout the course. These activities are meant to encourage attendance and allow for brief reflection on the week's material. Class attendance and participation will be recorded at the discretion of the instructor including by "Roll Call" and/or by checking presence via completion of in-class activities. Attendance and participation points will be awarded to students present in class. Scores will be recorded in Canvas. Make-ups will be granted only for excused absences 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 midterm exams are scheduled for September 27 and November 1, and the final exam is scheduled by the registrar's office for

December 11, 10:00AM-12:00PM. All exams are in-person during our regular lecture and in our regular classroom. **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/](https://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.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://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students here: <https://gatorevals.a.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](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/>.

#### 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.

### 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
<b>Week 1</b>	Orientation-Course Introduction Math Connections
<b>Week 2</b>	What is a Function? Homework
<b>Week 3</b>	A Rigorous Definition of Function Types of Functions Homework
<b>Week 4</b>	Rates of Change Homework
<b>Week 5</b>	A Further Investigation of Rates of Change Review of Conic Sections Homework
<b>Week 6</b>	Conic Sections continued Exam 1
<b>Week 7</b>	Sequences and Triangular Differences
<b>Week 8</b>	Recurrence Relations Homework
<b>Week 9</b>	Recurrence Relations continued Functions Defined by Patterns Homework
<b>Week 10</b>	Applications/Catch-up/Review Homework
<b>Week 11</b>	Regression and Mathematical Modeling Exam 2
<b>Week 12</b>	Regression and Mathematical Modeling
<b>Week 13</b>	Catch-up/Exploring Functions in Other Systems Homework
<b>Week 14</b>	Catch-up/Exploring Functions in Other Systems (if time) Homework
<b>Week 15</b>	No Class: Thanksgiving Break
<b>Week 16</b>	Catch-up/ Exploring Functions in Other Systems (if time) Project Due on 12/4

**Exam 1- Friday, September 27, during class (LIT223)**

**Exam 2- Friday, November 1, during class (LIT223)**

**Final Exam-Wednesday, December 11 @ 10:00AM-12:00PM (LIT223)**