Functions and Modeling MAT 3503 Fall 2019

Classroom: LIT 205Meeting Times: MWF 5Instructor: Dr. Konstantina ChristododoulopoulouOffice Phone: (352) 294- 2315Office Location: LIT 365Email: kchristod@ufl.eduOffice Hours: M4, W6, R5 and by appointment.Email: kchristod@ufl.eduOpen 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

Course content and objectives: We will cover selected topics from: functions and relations, sequences, patterns and mathematical modeling, and, if time permits, parametric & polar relations and complex numbers. In revisiting secondary mathematics content, prospective mathematics teachers are expected to deepen and broaden function-related mathematical content knowledge from algebra through calculus by exploring relevant topics in an inquiry based learning situations and make connections between college mathematics and secondary school mathematics.

Text: None required. We will use notes and activities written specifically for this course and 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.

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%
The Portfolio	5%
Homework	20%
2 Semester Exams	40%
Final Exam	25%

The following grading scale applies.

A	$\geq 90\%$	С	$\geq 70\%$
A-	$\geq 87\%$	C-	$\geq 67\%$
B+	$\geq 84\%$	D+	$\geq 64\%$
В	$\geq 80\%$	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!

If you receive a grade ≤ 4 on any problem, you may turn that solution 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.

The Portfolio: Mathematicians and scientists all keep a detailed record of their progress on the problems they are working on. They will record this in a notebook or they will keep a file. The Portfolio for this course is for recording your work. It can be any kind of binding; spiral, three ring or fixed lab book. Each project should start on a fresh page. When I collect the Portfolio, you will turn in the entire notebook. You should take pride in the appearance of your portfolio. The grading of your portfolio will be done according to the following

Grading Rubric for the Portfolio:

Clear labeling of the categories of statements given below.

- 1. Title. This section should include a general description of the problem.
- 2. Questions. To make progress you will need to pose questions, the kind of questions where the answers will lead you to more questions and new ideas.
- 3. **Conjectures.** What do you think might be true? Say it in a declarative sentence.
- 4. Experiments. Try an example and see if your conjecture is true in the example.
- 5. **Observations.** Based on the experiments, your observations should confirm or deny a conjecture. Look at your examples with an eye to answering your questions.
- 6. **Conclusions.** Written as declarative sentences, the conclusions are hopefully true statements.

- 7. **Critiques.** Perhaps an example is too specific to be helpful, or a conjecture led you in a wrong direction, this is the place to discuss this type of issue.
- 8. Explanations. You should attempt to justify your conclusions.
- 9. Narrative flow. Write in complete sentences, clearly formulating concepts.

Submitted work expectations: Submitted work 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.

Participation: You are expected to participate in class discussions. Therefore, *it is absolutely essential that you attend class.* You will be allowed 3 absences with no penalty. After this point, I reserve the right to drop your final grade by 2% for each additional 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 cumulative final exam are scheduled for this course. The mid-term exams are tentatively scheduled for September 27 and November 6, and the final exam is scheduled for Tuesday, December 10, 12:30-2:30PM. 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 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/

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.

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/ department/incomplete-grades/.

Students with learning disabilities: Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester in order to allow enough time for accommodations to be arranged.

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.

Updated 8/19/2018