

MATH 399: Mathematical Computing

Course: Term: Spring 2016
Section Schedule: TuTh, 3:30 - 4:45 PM
Section Location: Music Building, Room 137 (Multimedia Learning Lab)

Instructor: Tyler Kloefkorn
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Office Hours: Mo 3:00 - 4:00, Tu 11:00 - 12:00, Th 2:00 - 3:00

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Textbook: Title: *Insight Through Computing:
A MATLAB Introduction to Computational Science and Engineering*
Author: Charles F. Van Loan and K.-Y. Daisy Fan

Course Description and Objectives: This course is an introduction to using computers to understand mathematical concepts and solve problems in the mathematical sciences. Fundamental concepts of MATLAB programming (including flow control, primitive data structures, recursion and graphics) are applied to concepts and problems in applied mathematics, probability, geometry, and discrete mathematics.

Given written or oral descriptions of algorithms that solve representative problems in the mathematical sciences, you will be able to implement those algorithms in MATLAB. Also, given descriptions of representative problems in the mathematical sciences, you will be able to construct and implement algorithms in MATLAB for solving those problems.

In addition, you will learn the basic syntax of MATLAB; you will know how to plot in two and three dimensions, construct and manipulate common objects (such as values, arrays, and strings), and write functions and scripts.

I am very excited to have the chance to teach this class this semester. If there is anything I can do to help you succeed in this course or make it more enjoyable, please share what's on your mind. I am enthusiastic about working with you and will go out of my way to help you succeed.

Grades: This course will be graded on the alternative grading system. In the alternative grading system, possible grades are “S” (superior), “P” (passing), and “E” (failing).

In order to earn a grade of “S” in this course, you must do the following:

- Have at most one unexcused absences.
- Complete all assigned in-class M exercises.
- Complete three P exercises from each chapter.

In order to earn a grade of “P” in this course, you must do the following:

- Have at most three unexcused absence.
- Complete a minimum of 90% of all assigned in-class M exercises.
- Complete two P exercises from each chapter.

Note: M and P exercises are the two kinds of exercises found in the course textbook. M exercises are quick concept checks and P exercises are more challenging (and less restrictive).

This is an independent-study-type course and this means that you will have a lot of freedom for your academic endeavors. In particular, you will find a wide variety of P exercises in the textbook and you are encouraged to complete those that interest you most. I encourage you to take pride in the exercises you attempt and the code you build. Since this is an independent-study-type course, I ask for enthusiasm and effort, and I hope your work in this course will be very rewarding.

Please notice that in order to pass this course you must make a commitment to attend the each class meeting. If you need to miss class for unavoidable circumstances, contact me as soon as possible. Please provide documentation of the reason for your absence, such as a doctor’s note or a note from the director of the program that required you to miss class. I will consider your absence “excused” if I receive documentation from you and you complete all exercises from the relevant course meeting. It is the student’s responsibility to arrange for how any missed work will be handled. It is also the student’s responsibility to keep informed of any announcements, syllabus adjustments or policy changes made during scheduled classes.

Students are expected to be familiar with the University Class Attendance policy as it appears in the University of Arizona General Catalog. Students who miss the first two class meetings may be administratively dropped unless they have made other arrangements. In addition, students with more than 3 unexcused absences may be administratively dropped from the course. Please note the following:

- All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion,
- Absences pre-approved by the UA Dean of Students will be honored.

Help: *Do not let your questions go unanswered.* I am here to help you learn – please do not hesitate to ask a question. You can visit me during office hours, arrange for an appointment outside of my scheduled office hours, or send me an email.

This is a challenging course, and you will probably find yourself having to develop skills quite different from the ones you developed before. When you come to see me with questions, I will ask you questions to determine what you know and don't know. Please understand that I ask questions in order to guide you to a solution so that you can later recreate your reasoning on an exam.

Accommodations: If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me soon. I look forward to assisting you as best I can. Please bring a notification letter from the Disability Resource Center outlining your requested accommodations.

Course Withdraws: If you withdraw from the course via UAccess by January 27, the course will be deleted from your enrollment record. If you withdraw from the course by March 29, you will receive a grade of W. The University allows withdraws after March 29, but only with the Dean's permission.

Incomplete Grades: The grade of I will be awarded if all of the following conditions are met: (1) the student has completed all but a small portion of the required work, (2) the student has scored at least 50% on the work completed, (3) the student has a valid reason for not completing the course on time, (4) the student agrees to make up the material in a short period of time, and (5) the student asks for the incomplete before grades are due, 48 hours after the final exam.

Student Conduct and Academic Integrity: It is extremely important that we build and maintain a welcoming classroom environment. According to the University of Arizona Policies and Procedures, "The University seeks to promote a safe environment where students and employees may participate in the educational process without compromising their health, safety or welfare." Please be respectful and encouraging to your colleagues. Be mindful of your actions and do your best to support a positive learning environment.

According to the Code of Academic Integrity, the University of Arizona requires all instances of prohibited academic conduct be reported, no matter how small the violation. Prohibited conduct includes, but is not limited to:

- Looking at another student's work except when it is explicitly approved;
- Copying the work of another person and submitting it as your own;
- Resubmitting graded work that was altered after being returned.

For a more complete list and more information regarding academic integrity, see the University of Arizona Code of Academic Integrity. Failure to comply with these policies can result in academic sanctions.