Computing for Engineers

Course prefix: CS

Course number: 1371

Section: 01

CRN (you may add up to five):
31334 32480

Instructor First Name: Idel

Instructor Last Name: Martinez

Semester: Spring

Academic year: 2026

Course description:

This course is designed to introduce you to problem-solving, designing, and analyzing algorithms with the MATLAB programming language. The course assumes no prior knowledge of programming skills. At the end of this course, students will develop a beginner's skill level for deriving algorithms, as well as become familiar with MATLAB. To achieve this, the course will use real-world data to guide students through understanding and applying it to achieve a goal, and then output or display the results in an appropriate format.

Course learning outcomes:

Through active engagement and completion of the course, students will be able to:

1. Use the MATLAB programming language for solving numeric and text problems, plotting solutions, and applying numerical methods.
2. Develop problem-solving skills and apply a step-by-step process to design and test algorithmic solutions to problems.
3. Implement programming concepts (variables, comments, data types, functions, control
   flow) in custom MATLAB programs.

Required course materials:

There are no required materials to purchase for this course. Students are required to have access to a working computer with a functional webcam and microphone, along with a pencil for in-class work, quizzes, and exams.

Grading policy:

Assessment in this course is divided into participation (8%), homework (17%), quizzes (22.5%), and exams (52.5%). The following is the breakdown of these requirements.

Participation

The participation grade in this class will be split up across four types:

- MATLAB Setup (1%). This mini-assignment is here to ensure you were able to successfully set up the MATLAB IDE on your computer and access the homework website.
- Surveys (3%). There will be three main surveys on Canvas that you will need to complete as part of this course, which will also serve as a verification of participation for financial aid. The intro and syllabus acknowledgment open at the start of the semester, and an academic integrity survey opens three weeks into the semester. There will also be an optional exit survey for 0.5% bonus points.
- Lecture Questions (2%). This course will have "Clicker" questions throughout the semester for in-person lectures. These can be joined in-person or online and will serve as check-ins to see if we need to review some material (so they are not graded for correctness). Each in-person lecture may contain up to three of these questions. Your final will only count 80% of the total questions, meaning you can miss 20% of the questions.
- EdDiscussion (2%). We will use EdDiscussion, a private online forum for courses, to help with course organization, announcements, and to serve as a help desk. This is a place where you can ask questions, post tips or general comments, and answer your peers' questions. To obtain full points, you must meaningfully engage in a minimum of three questions, comments, or answers.

Homework

We'll be using MATLAB Grader, an online website for automated code assessment, to submit homework. There will be 13 assignments, totaling 17% of your grade. Homework is divided into small problems across levels, each worth a different number of points. This allows you to skip some problems if you become tired of one (although all must be completed to receive full points, so be sure to return to them eventually!). Each homework will be worth 14 points, where first-level problems (four total) earn 1 point each, second-level problems (two total) earn 2 points each, and third-level problems (two total) earn 3 points each. You will have 10 days to complete each homework. All but the first two assignments will open on Mondays at 12:00pm (EST) and will be due the following Wednesday at 11:59pm (EST). You will have 48-hour time credits that you can use to submit assignments late without penalty.

Quizzes

There will be four paper quizzes in this class, which will take place in the classroom two weeks before the exams. Each quiz will be worth 7.5% of your grade, totaling 22.5%, since the lowest quiz grade will be dropped. The goal for these is to help you study for the exams and allow more room for improvement. As such, they will cover part of the material for the next exam, but with shorter questions and answers. These will take place in person, but will not take up the entire lecture time.

Exams

There will be three paper midterm exams and a final exam. Each exam will be worth 17.5% of your grade, totaling 52.5%. The midterm exams will build upon the quizzes, involving longer answers, such as annotating code, tracing, writing code, or explaining specific programming constructs. These will take place in the classroom, taking up the entire lecture time. As a programming course, each midterm exam will be cumulative in nature, but with a focus on specific topics. They will be closed notes, but a reference MATLAB sheet will be provided, since the goal is not to memorize functions but rather to apply them. The final exam will be optional and can be taken to replace a midterm grade (if the final exam grade is higher than a midterm exam grade). It will be entirely cumulative and involve solving larger problems. The final will also be taken in person, but it requires a laptop to write code, along with a pencil for guided, handwritten annotations to submit alongside the MATLAB program.

Attendance policy:

Participating in hands-on work is essential to success in CS 1371. Because of this, you are expected to attend class in person and come prepared to class sessions. Although the course lectures are recorded, having live help will be useful, as it will also help the instructor assess whether students are understanding.

Academic honesty/integrity statement:

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic integrity policy. Every Student is expected to read, understand, and abide by the Georgia Tech Academic Honor Code.

As a programming course, discussions about course sessions, programming concepts, and algorithms are encouraged. Assignments and practice problems are collaborative, for which students can collaborate by talking through problems, discussing the MATLAB programming language, etc. However, the work submitted by a student must be their own. Students

should not copy or send code to peers, but high-level discussions on their solutions are permitted. Additionally, students should not copy & paste from/to other sources such as Stack Overflow, AI agents, or other platforms that would compromise the integrity of their work or violate the course's guidelines on original submission. Students may use these resources for support, such as further inquiring about algorithms, programming language syntax, etc., but they should be used after first attempting the problem independently. The goal of these resources should be to supplement students' learning process and practice good programming practices, not replace their learning process.

We analyze assignment submissions with Moss, "a system for detecting software similarity," and manually analyze flagged cases. Additionally, we cross-check solutions to those generated by AI agents, and search for defined "tells." Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity (OSI), which will investigate the incident and identify the appropriate penalty for violations. However, in this course, you will be given a 72-hour period to come forward and admit to cheating before you are reported to OSI.

Core IMPACTS statement(s) (if applicable):

This is a Core IMPACTS course that is part of the Mathematics & Quantitative Skills area. Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help master course content, and support students' broad academic and career goals.

This course should direct students toward a broad Orienting Question: **How do I measure the world?**

Completion of this course should enable students to meet the following Learning Outcome: Students will apply mathematical and computational knowledge to interpret, evaluate, and communicate quantitative information using verbal, numerical, graphical, or symbolic forms. Course content, activities, and exercises in this course should help students develop the following Career-Ready Competencies:

- Information Literacy
- Inquiry and Analysis
- Problem-Solving