ECE105 – Online
Spring 2025
5 Weeks

Course Information

Course Title:	MATLAB Programming
Course Prefix & Number:	ECE105
Section Number:	30127
Credit Hours:	1
Start Date:	Jan 20, 2025

Start Date:	Jan 20, 2025	End Date:	Feb 21, 2025

Course Format

The format for this course is asynchronous online and runs for 5 weeks. "Asynchronous" means there will be no live lectures; instead, lecture videos, slides, and example codes will be posted on Canvas. Twice a week (Tue and Fri), assignments will be due with the exception of the first assignment being due on Wednesday and the last assignment on Thursday.

Think of this format as having 10 class days total, with you getting to choose when to experience the lecture, but still required to submit assignments on time.

Instructor Information

Instructor:	Paniz Tavassoli
Email:	paniz.tavassoli@scottsdalecc.edu
Phone:	(480) 423-6015
Office Location:	CM-427
Office Hours:	Mon/Wed 9 - 9:30 AM and 12 – 12:30 PM Thursday 9 - 9:30 AM and 12 – 2:30 PM
Office hours link:	meet.google.com/msb-vnpc-fww

The best way to get in touch with me is via virtual office hours at the link above. Note that you are not required to use a webcam, but it will be necessary to share your screen and use a microphone. The next best option is email. You can do this either through Canvas or standard email.

Keep in mind the following:

- "Help" is not the same as "giving out the answers"
- Use office hours efficiently, show up ready to ask questions
- The worst communication option is not communicating at all

Course Description

Use MATLAB to solve engineering problems. An overview of programming, including matrices, structures, strings, functions, control flow, file management, data analysis, graphing capabilities, and mathematical calculations.

Pre- and Co-requisites

Pre-requisites: [(MAT150 or MAT151 or MAT152) and MAT182] or MAT187 or higher level mathematics course.

Co-requisites: none

Course Competencies

1. Write MATLAB programs which use MATLAB`s built-in functions.

2. Create MATLAB programs that store data within scalars, vectors, and matrices and then use MATLAB to manipulate and analyze the data.

3. Import/Export data between Excel and MATLAB.

4. Plot functions using the built-in capabilities of MATLAB.

5. Create user-defined functions within MATLAB.

6. Format the appearance of inputs and outputs within a MATLAB program.

7. Write MATLAB programs utilizing logical functions and selection structures.

8. Write MATLAB programs containing repetition structures.

9. Solve systems of linear equations using MATLAB.

10. Solve algebraic equations symbolically using MATLAB.

Texts and Course Materials

All curriculum materials are Open Educational Resources (OER), which will be distributed through the course website (Canvas). This means students don't need to buy a textbook.

Course Technologies

View the [Accessibility Statements & Privacy Policies](#) of technologies used in this course.

Maricopa Systems

This course uses key Maricopa systems for course management and communication.

- Canvas Learning Management System
- Student Maricopa Gmail Account

Synchronous Communication Tools

This course implements the use of web conferencing and/or other synchronous course tools.

- Google Meet

Streaming Media/Audio/Video Tools

This course uses YouTube videos

Student Assignment Tools

This course requires students to participate in or submit assignments using desktop or cloud-based applications.

- MATLAB (can be accessed freely through [mySCC](#))
- Google Products

Course Policies

The following are policies specific to this course. Students are also responsible for the college policies included on the [Student Regulations](#) page of the Maricopa Community College District website. Syllabus is subject to change at instructor's discretion.

Required Texts and Course Materials

- <u>No</u> textbooks are required
- USB/flash drive (at least 1 GB)
- Access to a computer with internet connection, speakers, and microphone

Grading Standards & Practices

Grade Scale (traditional, no curve)

Letter Grade	Points Range		Assignment type	Percent of grade
A	90 – 100%		Homework	70
B	80 – 89%		Quizzes	30
C	70 – 79%			
D	60 – 69%			
F	0 – 59%			

Attendance/Contact Policy

With no live lectures, in-person attendance will not be recorded. Instead, submission of assignments will be used as a proxy for attendance, per the following:

- If students at any point exceed four missed assignments (both homework and quizzes), they will be withdrawn from the course (code: Excessive Absences).
- Exceptions *may* be granted by the instructor due to official SCC-sanctioned events, religious observances, medical reasons, or legitimate emergencies. It is the student's responsibility to inform the instructor via email when these events occur and to request an exception.

Students are required to read information posted as a Canvas announcement or sent out to their school email address.

Structure of lessons and assignments

There are three main components to each "class day." I put that in quotes because there is not a scheduled time to meet, but there are firm due dates for submission of assignments:

1. **Lessons:**
    a. The primary teaching method will be lecture videos posted on Canvas.
    b. These will be accompanied by follow-along worksheets. Print out the worksheet and fill in answers as you watch the videos.
    c. Additionally, lessons may include lecture slides, readings, and example codes.

2. **Quizzes:**
   a. Quizzes will be due following each class day. Late quizzes will not be accepted.
   b. Quizzes will be taken through Canvas. You will have one attempt.
   c. Quiz questions will be very similar to the follow-along questions. You may use these follow-alongs or any notes during a quiz.
3. **Homework**
   a. Homework will be due following each class day. Homework can be submitted up to three days late for a 30% point deduction. No homework will be accepted more than three days later. This 3-day late work acceptance does not apply during the final week of class. Those assignments must be submitted on time to beat the end-of-term deadlines.
   b. Homework submissions (usually published code) will be submitted by uploading them to Canvas.
   c. It is very easy to tell when code is copied (there are so many different coding strategies!). If copying occurs on an assignment, all students involved receive a 0. Repeated violations will invoke the official plagiarism procedure found in the student handbook.

For a listing of all these components for each day, see the course schedule at the end of this syllabus.

Instructional Contact Hours

This is an accelerated one (1) credit-hour course with a lab time component. Each week on average, plan to spend three hours on lessons, and six hours on assignments.

Response time, grade protests

From Monday mornings through Friday mid-day, students can expect the instructor to respond to messages sent via the Canvas LMS or email within 24 hours. While I may respond on Saturdays, I do not reply to messages on Sundays.
Students can expect assignments to be graded within 7 days of submission. Students have until 7 days after an assignment is returned to protest a grade (exception: grades posted in the last week of the semester must be protested earlier to beat the deadline for official grade posting). Once those 7 days have passed, the grade will not be reviewed. To protest a grade, simply speak with the instructor via email.

Disruptive Students

The classroom (including office hours, Canvas discussions, etc.) should be an environment of respect that is conducive to learning for all students present. To help with this, the following behaviors are prohibited:

- No coarse language
- No shouting or other creation of loud sounds
- No monopolizing the instructor's time at the expense of other students
- No use of electronic devices except as specifically indicated by instructor on a day-by-day basis
- No intimidating or threatening actions (physical or verbal)

Any egregious violations of these rules, as judged by the instructor, will invoke the following procedure:

- First offense: individual conversation between student and instructor; documentation of incident
- Second offense: meeting between student and dean before being allowed back in the classroom; documentation of incident
- Third offense: meeting between student and dean; potential suspension; documentation of incident

Disability Accommodations

Suitable accommodations (e.g. supplying a notetaker, test-taking assistance) will be made for students who have disabilities. If you require assistance, please call the Disability Resources and Services (DRS) at 480-423-6517

Generative Artificial Intelligence (AI) Policy

Generative AI can be defined as "a category of artificial intelligence (AI) algorithms that generate new outputs based on the data they have been trained on. Unlike traditional AI systems that are designed to recognize patterns and make predictions, generative AI creates new content in the form of images, text, audio, and more." Some examples of generative AI tools include but are not limited to: ChatGPT, Google Bard, Microsoft Copilot, Stable Diffusion, GrammarlyGo, and Adobe Firefly.

In this class, all the work submitted must be your own. The use of generative AI tools will be considered academic misconduct (see Administrative Regulation 2.3.11 1.B(b)) and will be treated as such. If you are unsure if the tool or website you are using is a generative AI tool, please contact the instructor for further clarification before using the tool or website.

Student/Instructor Interaction

In this course, you can expect regular and substantive interaction (RSI) that aligns with Scottsdale Community College's mission to provide challenging and supportive learning experiences and the US Department of Education's requirement for regular and substantive interaction (RSI) for online courses. My commitment to your success includes the following:

- Being available during regularly scheduled student support hours as stated in the syllabus.
- Providing individual feedback regularly on assignments.
- Promptly responding to student questions about the course sent via email or the Canvas inbox.
- Regularly posting announcements about the assignment's due dates.
- Monitoring your academic progress and communicating concerns, as needed.

My purpose and expectations

My purpose in being here is to serve you by being a thorough, helpful, and fair instructor, and so provide a solid foundation for further engineering studies. However, the responsibility for grabbing hold of your education lies with you. I expect you to be respectful to me and your classmates and to realize what a gift and responsibility it is to be a student. The more genuine you are, the more you'll learn and the more fun it'll be for all of us. If you have questions/ concerns/struggles with anything, simply ask and you'll find help.

Students are responsible for the information contained in this syllabus, the Syllabus page in your Canvas course and the *College Policies & Student Services* page found in the First Steps module of your Canvas course. Students will be notified by the instructor of any changes in course requirements or policies.

Student must indicate acceptance of the syllabus policies by completing the **Syllabus Agreement Form** on Canvas.

Schedule is subject to change at instructor's discretion. All listed items will be due on the given date at 11:59 PM

Class #	Due Date	Topics/Videos	Assignments
1	Jan 22	Opening MATLAB. Windows. First Exercise. First script & Publishing	-Quiz 1 -HW 1
2	Jan 24	Programming languages. Order of Operations. Using variables. Arrays. Pre-filling arrays. Data types.	-Quiz 2 -HW 2
3	Jan 28	Organizing Scripts & Comments. Array indexing. Subarrays. Editing subarrays. Array vs. matrix operations.	-Quiz 3 -HW 3
4	Jan 31	Built-in functions overview. Rand, find, input. Cell arrays. Disp, num2str, fprintf. Data loading, saving, exchanging with Excel.	-Quiz 4 -HW 4
5	Feb 4	Basic 2d plots. Modifying plot appearance. Multiple 2D plots. Adjusting axes. Special 2d plots. 3D Plots.	-Quiz 5 -HW 5
6	Feb 7	Logical data type. If/else. Switch/case. While loops.	-Quiz 6 -HW 6
7	Feb 11	For loops. Nested loops.	-Quiz 7 -HW 7
8	Feb 14	Vectorization. Logical masks. Applications.	-Quiz 8 -HW 8
9	Feb 18	User-defined functions.	-Quiz 9 -HW 9
10	Feb 20	Systems of equations. Symbolic equations.	-Quiz 10 -HW 10