

INTRO TO PROGRAMMING AND PROBLEM SOLVING IN MATLAB

Basic Course Information

College	De Anza College
Course / Section	ENGR D011.44
Quarter / Year	Fall 2026
Units	5 units
Class Days / Time	Tuesday and Thursday, 06:00 PM - 07:50 PM - Lecture Tuesday 8:00 PM - 8:50 PM, Thursday: 8:00 PM- 9:50 PM - LAB
Location / Modality	S44
Instructor	Yawo Ezunkpe, PhD
Email	ezunkpeyawo@fhda.edu
Phone	N/A
Office /Office Hours	S44/Tue: 8:50-9:50 pm
Prerequisites / Advisories	MATH 1B or MATH 1BH/ ESL 272 and ESL 273, or ESL 472 and ESL 473, or eligibility for ENGL C1000 or ENGL C1000H or ESL 5
LMS	Canvas: https://deanza.instructure.com/courses/48549

Course Description and Goals for Students

This course utilizes the MATLAB environment to provide students with a working knowledge of computer-based problem-solving methods relevant to science and engineering. It introduces the fundamentals of procedural and object-oriented programming, numerical analysis, and data structures. Examples and assignments in the course are drawn from practical applications in engineering, physics, and mathematics

Course topics: Linear algebra, numerical differentiation, numerical integration, systems of linear equations, ordinary differential equations, multidimensional graphics, data structures, data transfer, and advanced MATLAB functions.

Course Goals:

Introduce students to:

1. Developing algorithms, pseudocode, and flowcharts
2. Writing, compiling, analyzing, and debugging computer programs in MATLAB and C
3. Applying computer programming in solving engineering problems

Course Learning Outcomes (CLO)

Upon successful completion of this course, students should be able to:

1. Develop algorithms, pseudocode, and flowcharts
2. Define and manipulate variables in MATLAB
3. Define, index, and manipulate vectors and matrices in MATLAB
4. Write, compile, analyze, and debug user-defined functions in MATLAB
5. Incorporate selection and loop statements in MATLAB
6. Utilize modular programming to write a program in MATLAB
7. Plot and interpret data in MATLAB.
8. Work effectively in teams to define, propose, and solve engineering problems utilizing MATLAB

Required and Recommended Materials

Recommended textbook: Stormy Attaway, MATLAB: A Practical Introduction to Programming and Problem Solving, 5th ed., Butterworth-Heinemann, 2019.

<https://www.bkstr.com/deanzastore/follett-discover-view/booklook?shopBy=discoverViewCourseRefId&bookstoreId=2259&courseRefId=29116&termId=202722>

Software: MATLAB. Students must have reliable access to MATLAB and a computer capable of running the software and accessing Canvas. The software is available in room S44.

Technology: A personal computer is recommended for programming assignments and may be used for assessments when necessary.

Coursework and Assessments

Lab activities: Eight weekly Lab assignments. The Lab reports will be submitted electronically through Canvas by the due date.

Quizzes: There will be short weekly quizzes

Project: One individual MATLAB project, introduced later in the quarter. The project is worth 10% of the final course grade. Students should begin early and plan for substantial independent work.

Midterm Examination: TBD.

LAB: Weekly

Final Examination: TBA.

Grading Criteria

Components	Weight in %
In- Class Activities	5
Quizzes	10
Laboratory Reports	35
Projects	10
Midterms	20
Final	20
Total	100%

Letter-grade scale: A $\geq$ 93%; A- $\geq$ 90%; B+ $\geq$ 87%; B $\geq$ 83%; B- $\geq$ 80%; C+ $\geq$ 77%; C $\geq$ 73%; C- $\geq$ 70%; D $\geq$ 60%; F < 60%.

Regrade requests: Submit a written request through the instructor-designated method within 7 calendar days after the grade is posted. Include a clear explanation of the item to be reviewed.

Tentative Course Schedule: *The following is an approximate course schedule that is subject to change with fair notice given during class and/or via email and/or Canvas messaging.*

WEEK	TOPICS	READING/NOTES	LAB ACTIVITIES
1	Introduction to MATLAB	Chapter 1	No Lab
2	Vectors and Matrices	Chapter 2	Lab 1
3	Introduction to MATLAB Programming	Chapter 3	Lab 2
4	Selection Statements	Chapter 4	Lab 3
5	Loop Statements and Vectorizing Code	Chapter 5	Lab 4
6	MATLAB Programs	Chapter 6	Lab 5
7	Text Manipulation and Data Structures	Chapter 7-8	Lab 6
8	Data Transfer	Chapter 9	Lab 7
9	Advanced Functions	Chapter 10	Lab 8
10	Special Topics / Project Integration	If time permits	Project due
11	FINAL EXAMS		

Attendance, Participation, and Late Work

Students are expected to attend class regularly, arrive on time, participate in learning activities, and monitor Canvas and De Anza email for course announcements. Because programming skills build cumulatively, missing class or falling behind can make later work more difficult.

Assignments are due by the dates and times posted in Canvas. Unless otherwise announced, late work is not accepted. If an emergency or documented circumstance affects your ability to complete work, contact the instructor as early as possible.

Collaboration, Academic Integrity, and Use of AI

De Anza College expects students to pursue their studies with honesty and integrity. Students are responsible for understanding what constitutes academic dishonesty and for asking the instructor when expectations are unclear.

Homework collaboration: Discussion of concepts and problem-solving approaches is encouraged, but each student must author and submit their own work. Copying another student's code, output, or written work is not permitted.

Project and exams: No collaboration is permitted unless the instructor explicitly authorizes it. Unauthorized sharing of code, solutions, files, or exam content may be treated as academic dishonesty.

Generative AI tools: Use is permitted only when explicitly authorized for a particular assignment. When authorized, students must follow the instructor's directions for disclosure or citation and remain responsible for the accuracy and originality of submitted work.

Accessibility and Student Support

De Anza College is committed to providing access to students with disabilities. Students who need academic accommodations should follow the college's current procedures for requesting and documenting accommodations and should contact the instructor as early as possible so approved accommodations can be implemented in the course.

Students are encouraged to use De Anza College academic and student-support resources when needed, including tutoring, counseling, technology support, and basic-needs services. Current service information is available through the De Anza College website.

Classroom and Community Expectations

A productive learning environment depends on mutual respect among students, faculty, and staff. Students should communicate professionally, respect differences in viewpoint and experience, follow college rules, and contribute to a classroom environment where questions and productive academic discussion are welcome.

Syllabus Updates

This syllabus is a course plan and may be revised when necessary to support learning or respond to college scheduling changes. Substantive changes will be announced in class and/or through Canvas. Students are responsible for reviewing posted updates.

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Student Learning Outcome(s):

- Write programs using MATLAB to implement problem solving algorithms.

Office Hours:

S44 M,T,W,TH 9:30 AM - 10:30 AM