COP 2271L

Computer Programming for Engineers Lab: MATLAB

Fall 2025 Department of Engineering Education, University of Florida

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Office: Nuclear Science Building 329

Class Times (Room):
Mondays 10:40 AM - 12:35 PM (WERT 255)

Office Hours
- Virtually: For short questions send me a message via Canvas between 1 pm to 5 pm.
- Zoom sessions and other times available by appointment

Peer Mentors:
Rikki DeOrero

COURSE DESCRIPTION

The laboratory is a one-credit lab that provides additional practice for those students who are/have been enrolled in COP2271 lecture. Students will work on a variety of problems not seen in the lecture to reinforce MATLAB programming topics.

Course Pre-Requisites / Co-Requisites
MAC 2312 – Analytic Geometry and Calculus 2 with a minimum grade of C

COURSE OBJECTIVES

The main objective of this lab is to provide a foundation in programming for engineering problem solving using the MATLAB software package. Students will develop the skills to analyze and break down an engineering program and solve it algorithmically using MATLAB. After this lab, students will have an understanding of various programming constructs and how they can be used to solve computational problems.

Relation to Program Outcomes (ABET):

Outcome	***Coverage ****
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	High
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and	High

welfare, as well as global, cultural, social, environmental, and economic factors	
3. An ability to communicate effectively with a range of audiences	Low
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	Medium
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	
6. An ability to develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.	
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	High

*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

Required Textbooks and Software

- An official textbook is not required. We will use the Canvas course site (https://elearning.ufl.edu) **EXTENSIVELY** to post course material. It will be every student's responsibility to be familiar with the material posted on the course web site.
- MATLAB Student Version (any recent version)
  You may consider using **UFApps** to access a number of popular software applications for "free" including MATLAB at: http://info.apps.ufl.edu/ ; MATLAB is also available for purchase and download from the MathWorks website.

Recommended Materials

- Title: MATLAB: A Practical Introduction to Programming and Problem Solving
- Author: Stormy Attaway
- Publication date and edition: August 6, 2016, 4th Edition (earlier editions will suffice too)
- ISBN-13: 978-0128045251

Attendance Policy and Class Expectations

• **Lab attendance is required** except for excused absences which must be documented in advance (except for emergencies). Furthermore, attendance will be taken during the lab and students must be present for their attendance to count and to receive credit for the lab assignment.
• **Each student is allowed to drop 1 laboratory, no questions asked.**
• Each week in lab, students will complete activities related to the current class topic, which must be turned in before leaving lab that day.
• There is no outside work required for the lab.
• Please note attendance is a large portion of your lab grade.
• **As in all courses, any unauthorized recording of the lab and unauthorized sharing of recorded materials is prohibited.**

Course Schedule

Week 1	(08/25):	Lab 1 – Intro and Tools
Week 2	(09/01):	**No Class (holiday)**
Week 3	(09/08):	Lab 2 - User input and output, variables, and operators
Week 4	(09/15):	Lab 3 - Flow control: if statement
Week 5	(09/22):	Lab 4 - While loops, break, continue
Week 6	(09/29):	Lab 5 - For loops, nested flow control
Week 7	(10/06):	Lab 6 - Practice questions on conditionals and loops
Week 8	(10/13):	Lab 7 - Game simulation
Week 9	(10/20):	Lab 8 - Matrices and vectors
Week 10	(10/27):	Lab 9 - Strings and ciphers
Week 11	(11/03):	Lab 10 - Pixels and image manipulation
Week 12	(11/10):	Lab 11 - Image Thresholding
Week 13	(11/17):	Lab 12 - Practice questions on matrices, strings, and images
Week 14	(11/24):	**No Class (holiday)**
Week 15	(12/01):	Lab 13 – Final Lab

Make-Up Policy

Makeups for labs are not normally allowed. If you cannot attend lab, you must contact the instructor well in advance. Submitting lab activities late will result in a zero. Arrangements will be made for students on a case-by-case basis for excused reasons. It is the student's responsibility to honor and respect the given deadlines posted on Canvas (https://elearning.ufl.edu).

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Lab Assignments (13)	100 each	100%

Grading Policy

Percent	Grade	Grade Points
90.0 - 100	A	4.00
87.0 - 89.9	B+	3.33
80.0 - 86.9	B	3.00
77.0 - 79.9	C+	2.33
70.0 - 76.9	C	2.00
66.7 - 69.9	D+	1.33
60.0 – 66.6	D	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Academic Dishonesty

In this course, you are expected to write all your own code for assignments. It is your responsibility to solve the programming challenges provided, not the responsibility of your friends, roommates, or online sources.

This requirement is in place to ensure that you develop the ability to tackle problems independently, a skill that will be important both in future studies and in your professional career.

Unless stated otherwise, all assignments in this course are intended to be completed individually, with no group or collaborative work. While discussing assignments with your classmates is both natural and encouraged—since learning often thrives in social settings—these discussions should focus on high-level concepts rather than specific code solutions. Here are some guidelines to help you understand what is considered acceptable and unacceptable:

ACCEPTABLE:

- Talking about the problem
- Using a whiteboard (or paper, or something similar) to draw out the problem
- Looking at someone else's code to help them identify or fix a bug, AFTER you have already completed that portion for yourself

UNACCEPTABLE:

- Splitting an assignment's work into multiple parts with other students
- Asking someone to send you their code
- Copying someone else's code into your own submission
- Giving another student your code for ANY reason—once you send your code to someone else, you have no control over where it ends up
- Giving another student step-by-step instructions on how to structure a solution to a problem— it's their job to write their code, not yours
- Looking up solutions to problems and using those solutions yourself verbatim
- Viewing solutions to the problems and mimicking those solutions—ask me, or one of the assistants in this course, for help

In Summary, unacceptable actions might include:

- Sharing or copying code through any medium such as email, text, snapchat, etc., and plagiarism, in addition to other dishonest behaviors, are all considered to be academic dishonesty. No information regarding in-class activities, weekly homework assignments, project, quiz, and exam solutions may be shared by students except for a discussion at a conceptual level when allowed.
- Collaboration (helping out others at a conceptual level through discussions) is encouraged in the course. However, looking at any piece of your peer's code, sharing files, searching for solutions found online, or using someone else to code your solution is strictly prohibited.

Consequences of the Honor Code Violation:

If you are not capable of completing an assignment on your own, that's okay. Lots of things in life can take time to really "click" for us, and we all learn at different rates. Under no circumstances should you ever consider cheating—that is, submitting someone else's work as your own—as an option. The consequences for doing so will be far worse than if you simply did not do the assignment. Students will complete this course with honor and integrity, or not at all. Submissions that are believed to be not entirely a student's own work will be reported to the administration for disciplinary action. Students who commit any of the unacceptable acts listed above will also be reported.

Any student found to have violated these rules, whether a provider or receiver of unauthorized help, will be given a zero on that assignment and will be reported to the Honor Court. Additional penalties like grade deductions may be applied depending on the severity of the case. If you aren't clear on what constitutes plagiarism, ask the course staff.

Regarding Use of Gen-AI Tools
With the advent of Gen-AI tools such as ChatGPT and others, it may be tempting to rely on these tools for writing code, debugging, and structuring programming logic. While I cannot prevent you from using these tools, I ask that you limit their use to specific tasks such as fact-checking, identifying bugs or inaccuracies in code, or drawing inspiration for algorithms.

One of the key aspects of this course is that you are both a programmer-in-training and a student. This means that your unique approach to coding and problem-solving is just as important as the final product. If you submit an assignment, project, or any other course material that involves code, please be transparent about any Gen-AI assistance you used. You should provide evidence of its use, such as code snippets generated by AI tools, accompanied by screenshots with timestamps or comments in the code itself.

Additionally, you must include a brief explanation within your submission detailing why you used Gen-AI tools, how they contributed to your development process, and how you adhered to the code of conduct and instructor guidelines. For instance, if you received help generating a function, comment in your code block about which portion was AI-generated and why you sought assistance.

Similarly, if I, as the instructor, use AI tools in the course, I will also be transparent about its purpose and provide appropriate documentation.

NOTE: Students will have the opportunity to inform the instructor in case they took any unauthorized help for a particular assignment within 24 hours of the submission deadline. In such a case they will receive no credit for that particular assignment and no further action will be taken.
We strongly encourage you to visit the course staff during office hours whenever you have doubts.

Students Requiring Accommodations
Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

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 via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

In-Class Recording
Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a

particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student
Conduct Code.

University Honesty Policy

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/policies/student-honor-code-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 or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy
There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources:

Health and Wellness

U Matter, We Care:
Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence
If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

E-learning technical suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

On-Line Students Complaints: http://www.distance.ufl.edu/student-complaint-process