

Computer Programming for Engineers Laboratory- MATLAB

COP 2271L Class Number 10987

Class Periods: Wednesday, 3rd - 4th Period, 11:00 am to 1:45 pm **Location:** NEB 101

Academic Term: Summer 2019

Instructor: Ashish Aggarwal

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Office: Nuclear Science Building (NSC) 223

Office Phone Number – 352-294-1385

Office Hours: TBA

Peer Mentors: TBA

Course Description

The laboratory is a one credit course which 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 lecture to reinforce MATLAB programming concepts.

Course Pre-Requisites / Co-Requisites

Prereq: MAC 2312/ Coreq: COP 2271

Course Objectives

The main objective of this course is to provide a foundation in programming for engineering problem solving using the MATLAB software package. Students will develop the skills to implement software solutions to a wide-range of engineering problems. Furthermore, students will be able to apply these skill sets to other programming languages.

Professional Component (ABET):

This course uses several programming assignments that teach students how to effectively develop programming solutions to engineering problems. Students will develop the skills to analyze a given engineering/mathematical question and pose it as a software solution.

Relation to Program Outcomes (ABET):

Outcome	Coverage*
a. Apply knowledge	High
b1. Conduct experiments	
b2. Statistical design of experiments	
c. Design	
d. Function on teams	Low
e. Solve problems	High
f. Professional and ethical responsibility	Medium
g. Communicate	Medium
h1. Economic impact	
h2. Global, societal, and environmental impact	
i. Lifelong learning	
j. Contemporary issues	
k. Techniques, skills, and tools for degree program	High

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

Required Textbooks and Software

A textbook is not required, and notes are provided through Canvas. Students will need access to MATLAB either freely through UF Apps (<https://apps.ufl.edu/vpn/index.html>) or for purchase at the following: <https://www.mathworks.com/store/link/products/student>

Recommended Materials

Title: MATLAB: A Practical Introduction to Programming and Problem Solving

Author: Stormy Attaway

Publication date and edition: August 6, 2016, 4th Edition

ISBN-13: 978-0128045251

Course Schedule

Week 1: MATLAB interface, pseudocode, variable creation, operators, user input and output

Week 2: Flow control: if statements

Week 3: While loops, break, continue

Week 4: For loops

Week 5: Practice Exam-1

Week 6: Matrices and vectors (arrays)

Week 7: Summer break

Week 8: Strings and ciphers

Week 9: Image manipulation

Week 10: Image thresholding, practice problems

Week 11: Practice Exam 2

Week 12: Scripts and functions

Week 13: Final project discussion

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 at the beginning of lab and all students must be present for their attendance to count. **Each student is allowed to drop 1 laboratory grade, 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. **The overall grade will be based on attendance and submission of the solutions of lab activities.**

Evaluation of Grades

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

Grading Policy

Percent	Grade
90 - 100	A
87 - 89.9	B+
80 - 86.9	B
77 - 79.9	C+
70 - 76.9	C
66.7 - 69.9	D+
60 - 66.6	D
0 - 59.9	E

Note: A C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). More information on UF grading policy may be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

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://www.dso.ufl.edu/sccr/process/student-conduct-honor-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.

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: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.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 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 support, 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>.

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@ufl.edu

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