Lahore University of Management Sciences

ENG XX – MATLAB for Everyone

Summer 2021

Instructor	Safee Ullah Chaudhary
Room No.	SBASSE 9-314
Office Hours	Monday 2:00 AM – 3:oo PM or by appointment
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Secretary/TA	TBA
TA Office Hours	TBA
Course URL (if any)	lms.lums.edu.pk
Lecture	TBA

Course Teaching Methodology (Please mention following details in plain text)
• Teaching Methodology: Synchronous lectures over zoom with recorded videos to be uploaded on YouTube. • Lecture details: 100% live interaction with available recordings of the lectures.

Course Basics				
Credit Hours	3			
Lecture(s)	Nbr of Lec(s)	20	Duration	120 min each, five days a week
Recitation/Lab	Nbr of Lec(s)		Duration	
Tutorial	Nbr of Lec(s)		Duration	

Course Distribution	
Core	No
Elective	Yes, can be taken as elective by students from other schools
Open for Student Category	Anyone
Close for Student Category	None

COURSE DESCRIPTION
This course provides a non-specialist introduction to programming in MATLAB. The focus is on developing the thinking process to write simple programs, and the necessary MATLAB tools to implement that.

COURSE PREREQUISITE(S)	
	None

COURSE OBJECTIVES	
CO-01	To develop the thinking process to program.
CO-02	To help students analyze and develop solution to programming problems
CO-03	To prepare students in MATLAB programming for later courses with programming intensive content

Learning Outcomes	
LO-01	Enabling Knowledge: The thinking process to program a computer; the syntax and control structures of a programming language
LO-02	Critical Thinking and Analysis: Ability to develop algorithms.
LO-03	Problem Solving:

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LO-04	Ability to implement algorithms programs to solve simple computing problems. Communication: Ability to explain the flow of algorithms as flowcharts.

Grading Breakup and Policy	
Home Work, Assignment(s):	-
Quiz(s):	100 (2 quizzes daily, total 40)
Labs:	
Midterm Examination:	
Project:	
Final Examination:	

Harassment Policy

SSE, LUMS and particularly this class, is a harassment free zone. There is absolutely zero tolerance for any behaviour that is intended, or has the expected result of making anyone uncomfortable and negatively impacts the class environment, or any individual's ability to work to the best of their potential.

In case a differently-abled student requires accommodations for fully participating in the course, students are advised to contact the instructor so that they can be facilitated accordingly.

If you think that you may be a victim of harassment, or if you have observed any harassment occurring in the purview of this class, please reach out and speak to me. If you are a victim, I strongly encourage you to reach out to the Office of Accessibility and Inclusion at oai@lums.edu.pk or the sexual harassment inquiry committee at harassment@lums.edu.pk for any queries, clarifications, or advice. You may choose to file an informal or a formal complaint to put an end of offending behavior. You can find more details regarding the LUMS sexual harassment policy here.

To file a complaint, please write to harassment@lums.edu.pk.

SSE Council on Equity and Belonging

In addition to LUMS resources, SSE's **Council on Belonging and Equity** is committed to devising ways to provide a safe, inclusive and respectful learning environment for students, faculty and staff. To seek counsel related to any issues, please feel free to approach either a member of the council or email at cbe.sse@lums.edu.pk

Rights and Code of Conduct for Online Teaching

A misuse of online modes of communication is unacceptable. TAs and Faculty will seek consent before the recording of live online lectures or tutorials. Please ensure if you do not wish to be recorded during a session to inform the faculty member. Please also ensure that you prioritize formal means of communication (email, lms) over informal means to communicate with course staff.

Academic Honesty

A student-teacher relationship is purely based on honesty, integrity and inspiration. Where teacher's role is to make every effort possible to inspire his students about the subject and develop independent thinking and a problem solving attitude about every concept, students are required to uphold values of truth and honesty and eagerness to learn. In this whole learning process honesty, integrity and commitment by students play a major role in their long term success. It means a student performs all academic work, assignments, exams, quizzes and never gets involved in any unfair activity falling under academic dishonesty like cheating, unauthorized aid of any kind, plagiarism etc. Students are expected to demonstrate extremely high level of integrity and honesty throughout this course.

Any instances of academic dishonesty in this course (intentional or unintentional) will be dealt with swiftly and severely. Potential penalties include receiving an "F" grade on the assignment in question or in the course overall. For further information, students should make themselves familiar with the relevant section of the LUMS student handbook.

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Examination Detail	
Midterm Exam	Yes/No: No
Final Exam	Yes/No: No

COURSE OVERVIEW – REGULAR LECTURES		
Lecture	Topics	Recommended Readings
1	Introduction to the course What is a program? Variables Operators	Handouts
2-3	Computer memory Variable declarations Size Assignments Vectors Matrices M Files	Handouts
4-5	for loops (with and without index) Logical operators AND and OR operators Debugging loops (step over, breakpoint) while loop	Handouts
6	for loops (with index manipulations), Counters (up and down) Accumulators, Debugging (stepping through)	Handouts
7-8	for loops (with conditions) Local vs. global variables Debugging (Type of breakpoints)	Handouts
9-10	Conditions Nested conditions Reverse loops Debugging using console and workspace	Handouts
11	Functions Single and multiple m files	Handouts
12-13	Structures Cells Files	Handouts
14-15	File writing Toolboxes More on workspace	Handouts
16-17	Recursion Stack	Handouts

	Heap	
18-19	GUI Call backs	Handouts
20	Review	Handouts

Textbook(s)/Supplementary Readings

- Textbook:

  Matlab for Beginners – A gentle approach

  By Peter I. Kattan.

- Other supplemental readings will be provided by the instructor