

ESC 152
[Engineering] Programming with MATLAB
Summer 2020 [Course # 1033]
M,W 5:00 – 7:25 PM, Remote Delivery

Catalog Description: ESC 152 Programming with MatLAB (2-2-3)
Prerequisite or co-requisite: MTH 168 (Pre-Calculus II), or equivalent
 Fundamentals of scientific and engineering problem-solving using computers. Covers the MATLAB language and concepts of accuracy and efficiency in programming solutions to engineering problems.

Textbook

Gilat, A., "MATLAB: An Introduction with Applications," 6th Edition
 ISBN : 978-1-119-29925-7, 414 pages, August 2016, ©2017
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-EHEP003645.html>

Software support [MATLAB is licensed in College Computer Labs]
 CSU Students will have free access to a extended license for your home or portable computer

Download what you need from your [MATLAB portal](#)

<https://www.mathworks.com/academia/tah-portal/cleveland-state-university-1145950.html>

Instructor

Dr. Jorge E. Gatica, Department of Chemical and Biomedical Engineering
 FH 449, (216) 523-7274, j.gatica@csuohio.edu

Office hours: [Instructor] TBA, after class, or by appointment
 [Teaching Assistant] TBA [time TBA]

Course Objectives

This course is designed to:

1. Provide students with a basic understanding of programming concepts: Input/output, sequential programming, repetition, branching, and modules.
2. Provide students with the skills to formulate an engineering problem and to develop a logical and efficient algorithm for numerical solutions.
3. Develop skills necessary to structure, implement, and debug computer programs.
4. Demonstrate programming skills using the MATLAB language.

Expected Student Learning Outcomes

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

1. Identify, formulate, and solve engineering problems using the MATLAB language.
2. Use techniques, skills, and tools the MATLAB language offers for modern engineering practice.

Fulfills [the following] Program Outcomes

- a) Ability to apply Mathematics, Science, and Engineering knowledge.
- e) Identification, formulation, and solution of Engineering problems.
- j) Use techniques, skills, and modern engineering tools necessary for Engineering practice.

Prerequisites by Topic

Pre-Calculus (Pre-Calculus II will be accepted as a Co-requisite)

Topics and Schedule (tentative)

Starting with MATLAB (Chapter 1)	1 class
Script Files (Chapter 4)	2 classes
Creating Lists and Tables (Chapter 2)	1 class
Mathematical Operations with Lists (Chapter 3)	2 classes
Two-Dimensional Plots (Chapter 5)	1 class
Functions and Function Files (Chapter 6)	2 classes
Programming in MATLAB (Chapter 7)	2 classes
Polynomials, Curve Fitting, and Interpolation (Chapter 8)	2 classes
Three-Dimensional Plots (Chapter 9)	1 class
Applications in Numerical Analysis (Chapter 10)	2 classes
Semester	13 classes

Grading and Grading Scale

The overall grade will be determined by

Homeworks/Quizzes:	15%
Projects/	2 x 15%
Mid-term Exam:	1 x 20%
Final Exam:	35%

Grading Scale (*)

A	> 95%
A(-)	90-95%
B(+)	85-90%
B	80-85%
B(-)	75-80%
C(+)	70-75%
C	60-70%
D	50-60%
F	< 50%

(*) <http://www.csuohio.edu/enrollmentservices/registrar/grades/grades.html>

Organization

Instructor:	Jorge E. Gatica	SH 459 (216) 523-7274	j.gatica@csuohio.edu
Teaching Asstnt:	TBA	SH 449 (216) 687-2571	TBA@csuohio.edu
Lectures:	TR	3:00 – 5:30 PM	WH203
Office Hours:	TR	10:00-11:00 AM, after Class, or by appointment	

Most of the *course material will be distributed via the eLearning Website*

<https://elearning.csuohio.edu/>

This website [Blackboard CE 6] can be *accessed through the CSUnet network*

<http://www.csuohio.edu> > My CSU > Blackboard > ESC152

Only a limited number of documents will be distributed as hand-outs, the remaining documentation can be downloaded and/or printed from the website. Most take-home assignments will be assigned and be submitted electronically through the website.

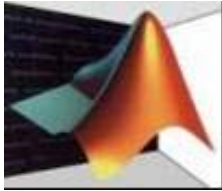
Solutions to the assignments will be demonstrated in class. In addition, in this website you will find copies of examples illustrated in class, PowerPoint slides, and a Discussion Board for posting questions and read your classmates questions/answers.

General Guidelines

The course consists of lectures and practical exercises in the computer lab using MATLAB. For successful completion of this course attendance and note-taking are strongly recommended. The textbook is used as supplemental instructional material and will not be the only resource employed in this course.

- *Lectures will be supplemented by hands-on exercises, the hardware/software you have available is therefore very important.*
- Students should become familiar with the context-sensitive help provided by Mathworks (MatLAB Help).
- A new assignment will be posted in the ESC152 Website every week. Assignments will be due (submitted electronically) by the following week. On the weeks of Tests/Projects [weeks 2, 4, and 6], an in-class exercise will be assigned on the ensuing week. The grade for the assignment will be an average between the in-class and take-home work.
- If a class is missed, the *student* is responsible for the missed material. If an in-class graded activity is missed without prior notification to the instructor, the student will receive no points.
- Make-ups will be arranged only under extenuating (documented) circumstances.
- Three [take-home] Projects and [their corresponding in-class] Mid-Terms Exam will follow the same approach. Projects will require submitting hard-copies of MATLAB Programs and other supporting materials [instructions to be provided w/assignment]. *Hard-copies must include student's name, CSU ID, and date. To be considered for grading, this hard-copy must be signed by both the student and the instructor or a teaching assistant.*
- In addition, a Final [Comprehensive] Final Exam will be given during Finals Week. The grade in the Final Project/Exam will replace the lowest score obtained in the Projects/Mid-Term
[if the Mid-Term or a Project is missing, that will be the grade replaced]
- *Students with disabilities* (<http://www.csuohio.edu/offices/disability/>) Educational access is the provision of classroom accommodations, auxiliary aids and services to ensure equal educational opportunities for all students regardless of their disability. Any student who feels he or she may need an accommodation based on the impact of a disability should contact the Office of Disability Services at (216) 687-2015. The Office is located in MC 147. Accommodations need to be requested in advance and will not be granted retroactively.

Prepared by: Jorge E. Gatica, Ph.D. – May 2020



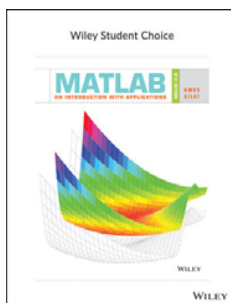
ESC 152 [Engineering] Programming with MATLAB
 Summer 2020 Remote Delivery Mon, Wedn. 5:00PM

[Course # 1033]
 7:25PM

Final Exam Wednesday, July 8, 2020

[Respondus]

Week #	From	To	Topic
1	May 18, 2020	May 22, 2020	Chapter 1: Starting with MatLAB
	Thursday, May 21, 2020		Last Day to Add [CampusNet]
2	May 25, 2020	May 29, 2020	Chapter 4: Scripts in MatLAB
2	Monday, May 25, 2020		Memorial Day (University Holiday)
2	Tuesday, May 26, 2020		Last Day to Withdraw [CampusNet]
2	Wednesday, May 27, 2020		First Project
3	June 1, 2020	June 5, 2020	Chapter 2: Creating Arrays in MatLAB
4	June 8, 2020	June 12, 2020	Chapter 5: Simple (two-dimensional) plots in MatLAB
4	Wednesday, June 10, 2020		Second Project/Mid-Term Exam
5	June 15, 2020	June 19, 2020	Chapter 3: Mathematical Operations w/Arrays
6	June 22, 2020	June 26, 2020	Chapter 6: Functions in MatLAB
6	Wednesday, June 24, 2020		Last Day to Withdraw with "W"
6	Wednesday, June 24, 2020		Third Project
7	June 29, 2020	July 3, 2020	Chapter 8: Polynomials, Curve Fitting, & Interpolation
7	Friday, July 3, 2020		July 4th (University Holiday)
8	July 6, 2020	July 10, 2020	Chapter 8: Polynomials, Curve Fitting, & Interpolation
8	Wednesday, July 8, 2020		Final Exam (Respondus)



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Amos Gilat

ISBN : 978-1-119-29925-7

Paperback, 414 pages

August 2016, ©2017

<http://www.wiley.com/WileyCDA/WileyTitle/productCd-EHEP003645.html>

Access CSU Bookstore [Folliet Access] following the "textbook info" link in CampusNet