

ENGR 6
MW 5-10 PM
Room 1447

MATLAB PROGRAMMING for ENGINEERS

Summer 2019
Section #8562

Instructor: Andy Hulse
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Off. Hrs: Tue 6-6:50PM and by appt.

Text: Zybooks.com, code SANTAROSAENGR6HulseSummer2019

Overview

This class is an introduction to Matlab for engineering majors: calculation, plotting, problem-solving, and programming. Prior experience in programming is not necessary.

Class Format

Summer classes are challenging; we will do our best to follow the online text. Expect most days to consist of 2-3 hours of lecture followed by in-class practice/lab time.

Grading

Projects:	40%
Homework:	20%
Quizzes:	20%
Final Exam:	20%

Homework

Homework in this class consists of completing the exercises in the online text. The text gives you immediate feedback on your mastery of the material. There may be an occasional in-class assignment, so let me know if you are not going to be in class on a given night. Homework is graded on completion, but I may deduct points for late submissions (it is always in your interest to complete).

Projects

This class has a strong lab component. There will be weekly in-class projects; students are expected to work in teams of two to complete. Projects are less defined and more open-ended than homework problems, but each student is expected to turn in three things to get full credit: code, a transcript of the test run, and a write-up. The final project (a GUI design) may take 2-3 class periods and will count as two projects.

Exams

There will be quiz every Monday. The quiz will typically consist of two questions that are similar to the in-class or text questions from the previous week. One will typically be closed book, closed notes, and the second will be a computer problem that is open-book, open notes. The worst score will be dropped. Exams are to be taken when scheduled and are required for a passing grade.

Computer Access

1447 Bussman is available for completing homework assignments. The open hours are posted on the door. You may also purchase a student version of Matlab for \$49 (www.mathworks.com search for student).

Tentative Schedule

<u>Jun 17/19</u>	<u>Ch 1-3: Intro, Operators, Variables, Scripts</u>	<u>Lab 1: scripts and digital IO</u>	
<u>Jun 24/26</u>	<u>Ch 4-6: 1D Arrays and simple plotting</u>	<u>Lab 2: plotting and analog IO</u>	
<u>Jul 1/3</u>	<u>Ch 7-9: 2D and higher Arrays, Visualization</u>	<u>Lab 3: Manipulating images</u>	
<u>Jul 8/10</u>	<u>Ch 10&11: Branching and Looping</u>	<u>Lab 4: Thermistor controller</u>	
<u>Jul 15/17</u>	<u>Ch 12-13: functions, parsing, and apps</u>	<u>Lab 5: Sudoku Solver</u>	
<u>Jul 22/23</u>	<u>Ch 14-16: structs and cells and objects</u>	<u>Lab 6: TicTacToe (text based)</u>	
<u>Jul 29/31</u>	<u>Ch 17: GUIs</u>	<u>Lab 7: TicTacToe GUI</u>	
<u>Aug 5/7</u>	<u>Project Time and FINAL</u>		