Introduction to MATLAB

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Course Details

Description

Introduction to MATLAB introduces students to basic MATLAB programming concepts.

These materials are a subset of course materials from Engineering Models that is taught with the University of Cincinnati as a dual enrollment course to hundreds of high school students.

Course Contents

Topic 1: Desktop, Variables, and Data Types

- Lectures:
  - Introduction to MATLAB
  - Creating Variables
  - Some Useful MATLAB Functions
  - Data Types

Topic 2: Script Files

- Lectures: Script Files

Topic 3: Plotting

- Video Lectures

- Introduction to Arrays
- Graphing
- Exercises: Graphing Functions Using MATLAB

Topic 4: Good Programming Practices

- Video Lectures
  - Good Programming Practices: Planning Your Code
  - Good Programming Practices: Creating Your Code

Topic 5: Input and Output Statements

- Video Lectures
  - Input Statements
  - Output Statements
- Exercises: Input/Output Statements

Topic 6: Conditional Statements

- Video Lectures
  - Conditional Statements: Logical Operators
  - Conditional Statements: if, else, and elseif
  - Conditional Structures: Switch
- Exercises:
  - Conditional Statements 1
  - Conditional Statements 2

Topic 7: Loops

- Video Lectures
  - Repetition Structure: Introduction to Loops
  - Repetition Structure: For Loops
  - Repetition Structure: While Loops
- Exercises: Loops

Topic 8: Nested Loops

- Lecture: Nested Loops Breaks
- Video Lecture: Repetition Structures: Nested Loops and the Break Statement

Topic 9: Arrays

- Video Lecture: Arrays
- Exercises: Arrays

Topic 10: [Array Functions](#)

- Video Lecture: Some Useful Functions for Arrays
- Exercises: Array Functions

Textbooks

[MATLAB: A Practical Introduction to Programming and Problem Solving](#), 3rd edition, Stormy Attaway, Elsevier, 2013 Ŧ

Ŧ *Supplemental Material*

Resources

[Cody](#): A program developed by MathWorks that allows students to progressively develop MATLAB® programming skills and earn badges in the process

Learn more about MathWorks academic resources:

[MATLAB Courseware](#)   [Hardware Resources](#)   [Classroom Resources](#)   [MATLAB Examples](#)   [Books](#)
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