More Octave/MATLAB resources

Octave Resources

At the Octave command line, typing **help** followed by a function name displays documentation for a built-in function. For example, **help plot** will bring up help information for plotting. Further documentation can be found at the Octave documentation pages.

MATLAB Resources

At the MATLAB command line, typing help followed by a function name displays documentation for a built-in function. For example, help plot will bring up help information for plotting. Further documentation can be found at the MATLAB documentation pages.

MathWorks also has a series of videos about various MATLAB features:

Introduction to MATLAB

Learning Module	Learning Goals
What is MATLAB?	Introduce MATLAB
The MATLAB Environment	Navigate the command line, workspace, directory, and editor
MATLAB Variables	Use the assignment operator to define scalar variables
MATLAB as a Calculator	Perform arithmetic calculations with scalars and functions using MATLAB syntax and order of operations.
Mathematical Functions	Use MATLAB variables for input and output to functions. Examples include: COS, SIN, EXP, and NTHROOT.

Vectors

Learning Module	Learning Goals
Creating Vectors via Concatenation	Create vectors by entering individual elements
Accessing Elements of a Vector	Access specific elements of a vector
Vector Arithmetic	Perform arithmetic calculations with vectors including

	element-wise operations
Vector Transpose	Use the transpose operator to convert between row and column vectors
Creating Uniformly Spaced Vectors (The Colon Operator)	Use the colon operator syntax to create vectors given the starting and ending values and the size of the interval
Creating Uniformly Spaced Vectors (The LINSPACE Function)	Use the LINSPACE function to create a vector.

Visualization

Learning Module	**Learning Goals**
Line Plots	Create a line plot of a vector and customize plot markers and colors
Annotating Graphs	Label axes, add a title, and add a legend to a plot

Matrices and Arrays

Learning Module	**Learning Goals**
Creating Matrices	Create matrices by directly entering scalars
Array Creation Functions	Create larger matrices and vectors with built in MATLAB functions such as ZEROS and EYE
Accessing Elements of an Array	Access elements of an array including entire columns or rows using row-column indexing.
Array Size and Length	Use built-in functions to determine array dimensions
Concatenating Arrays	Build larger arrays from smaller ones
Matrix Multiplication	Perform matrix multiplication and interpret error messages related to incompatible dimensions.

Programming

Learning Module	**Learning Goals**
Using the MATLAB Editor	Write a script in the MATLAB Editor, break code into sections to execute, and find help on functions
Logical Operators	Use relational and logical operators to create logical variables for program control
Conditional Data Selection	Access and change elements for a vector the meet a specified criteria

If-Else Statements	Use if-else statements to control which lines of code are evaluated
For Loops	Repeat a sequence of commands a specified number of times
While Loops	Repeat a sequence of commands while a specified condition is true