**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](http://www.gnu.org/software/octave/doc/interpreter/).

**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](http://www.mathworks.com/help/matlab/).

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

**Introduction to MATLAB**

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| **Learning Module** | **Learning Goals** |
| [What is MATLAB?](http://youtu.be/rXwTiKGlilE) | Introduce MATLAB |
| [The MATLAB Environment](http://youtu.be/iYTzJXXI9vI) | Navigate the command line, workspace, directory, and editor |
| [MATLAB Variables](http://youtu.be/jURDBsIPt5I) | Use the assignment operator to define scalar variables |
| [MATLAB as a Calculator](http://youtu.be/E7KllorEWkA) | Perform arithmetic calculations with scalars and functions using MATLAB syntax and order of operations. |
| [Mathematical Functions](http://youtu.be/R-kBvJ3kVVk) | Use MATLAB variables for input and output to functions. Examples include: COS, SIN, EXP, and NTHROOT. |

**Vectors**

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| **Learning Module** | **Learning Goals** |
| [Creating Vectors via Concatenation](http://youtu.be/2VNFqxmVqw8) | Create vectors by entering individual elements |
| [Accessing Elements of a Vector](http://youtu.be/GihLWwp8sBw) | Access specific elements of a vector |
| [Vector Arithmetic](http://youtu.be/t9Kla_YFdfs) | Perform arithmetic calculations with vectors including element-wise operations |
| [Vector Transpose](http://youtu.be/USehPX2iEa4) | Use the transpose operator to convert between row and column vectors |
| [Creating Uniformly Spaced Vectors (The Colon Operator)](http://youtu.be/L7cERR5J9XY) | 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)](http://youtu.be/3QM3LRnb4Tw) | Use the LINSPACE function to create a vector. |

**Visualization**

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| **Learning Module** | **Learning Goals** |
| [Line Plots](http://youtu.be/00k9A9W0cl8) | Create a line plot of a vector and customize plot markers and colors |
| [Annotating Graphs](http://youtu.be/ab3XIDdloNI) | Label axes, add a title, and add a legend to a plot |

**Matrices and Arrays**

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| **Learning Module** | **Learning Goals** |
| [Creating Matrices](http://youtu.be/5tm6PKaJdI8) | Create matrices by directly entering scalars |
| [Array Creation Functions](http://youtu.be/DDnm7vek6KY) | Create larger matrices and vectors with built in MATLAB functions such as ZEROS and EYE |
| [Accessing Elements of an Array](http://youtu.be/qqQnFp5aiuM) | Access elements of an array including entire columns or rows using row-column indexing. |
| [Array Size and Length](http://youtu.be/SqvtT_VspKU) | Use built-in functions to determine array dimensions |
| [Concatenating Arrays](http://youtu.be/TgopxS-_zl8) | Build larger arrays from smaller ones |
| [Matrix Multiplication](http://youtu.be/-jgXqAYBhxI) | Perform matrix multiplication and interpret error messages related to incompatible dimensions. |

**Programming**

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| **Learning Module** | **Learning Goals** |
| [Using the MATLAB Editor](http://youtu.be/TZr6GyxnI_w) | Write a script in the MATLAB Editor, break code into sections to execute, and find help on functions |
| [Logical Operators](http://youtu.be/5gVKJVVmbrM) | Use relational and logical operators to create logical variables for program control |
| [Conditional Data Selection](http://youtu.be/8wxh4LtT--g) | Access and change elements for a vector the meet a specified criteria |
| [If-Else Statements](http://youtu.be/oaK2-ZT9dls) | Use if-else statements to control which lines of code are evaluated |
| [For Loops](http://youtu.be/1u3RahlWEZA) | Repeat a sequence of commands a specified number of times |
| [While Loops](http://youtu.be/dofj51Ovdl4) | Repeat a sequence of commands while a specified condition is true |