MATLAB Tutorials for *Computational Neuroscience*

MATLAB Basics

Learning Module	Learning Goals
What is MATLAB?	https://youtu.be/UPdcCSAslqo
Getting Started with MATLAB Online	https://youtu.be/LSHC3M7xrvg
MATLAB Variables	https://youtu.be/FYPaH9pnLCA
MATLAB as a Calculator	https://youtu.be/yaRWYjvqqXk
MATLAB Functions	https://youtu.be/pwzAmsPhTik

Creating Vectors and Matrices

Learning Module	Learning Goals
Creating Vectors	https://youtu.be/e9JAJj54zIE
Creating Uniformly Spaced Vectors	https://youtu.be/OK-3V0NXgs8
Accessing Elements of a Vector	https://youtu.be/NWd7olaA9sU
Creating Matrices	https://youtu.be/ZxhyjmugQaY
Array Creation Functions	https://youtu.be/aQLu91JFPpg
Determining Array Size and Length	https://youtu.be/1eRF0yewPqI

Calculations with Vectors and Matrices

Learning Module	Learning Goals
Calculations with Vectors	https://youtu.be/moXftAx0fMc
Calculations with Matrices	https://youtu.be/JJIfnL7l-gw
Statistical Functions with Matrices	https://youtu.be/-A70d2cr-cM
Matrix Multiplication	https://youtu.be/IcXBakNZmhI
Solving Systems of Linear Equations	https://youtu.be/y4Ie6gTDFUg
Calculating Eigenvalues and Eigenvectors	https://youtu.be/KjnOOJShE58

Plotting

Learning Module	Learning Goals
Line Plots	https://youtu.be/0UnTjAMER0c
Exploring Figures in MATLAB Online	https://youtu.be/z_IZAf3sOig
Multiple Plots	https://youtu.be/kSCKVALwGmI
Annotating Graphs	https://youtu.be/S4CWcrYnGe0

Programming

Learning Module	Learning Goals
Managing Files in MATLAB Online	https://youtu.be/NJP-iRGnfuM
Writing a FOR Loop	https://youtu.be/GoSOE_BLbd4
Generating Random Numbers	https://youtu.be/qiFLKLQYfEs
Logical Variables	https://youtu.be/--Pe2xdh92Q
Writing a WHILE Loop	https://youtu.be/Yw2o0SmhtgM
IF-ELSE Statement	https://youtu.be/K7JEcd5JBL0
Accessing Elements of Vectors Using Conditions	https://youtu.be/3g6Ck-mlalQ