

Course Schedule (14 weeks)

Introduction to Scientific Computing

Week	Topics	Notes	Key Functions
1	Introduction to Scientific Computing MatLab User Interface - Programming Environment Print functions, fprintf, disp etc.		
2	Arrays, subarrays, arithmetics built-in functions (mean,max, min, std, sum, etc) Data Slicing		
3	Sorting arrays, find Relational and Logical Operators Diff, missing data etc		
4	Matrix rotation Linear, bar, histogram, polar, rose, 3D plots, surf		
5	Iterations Introduction to for loop and while loop		
6	For/While loop (numeric and logic conditions) If/else if (decision control)		
7	Switch/case/otherwise/menu Data normalization Is empty, isnumeric, is letter		
8	Functions-Sorting		
9	Functions (2), linear equations, root finding		
10	Linear and logictis Regression Advance Operations - Cuve fitting		
11	Covariance, correlation with Matlab		

12	Dimension reduction with PCA Applications		
13	Image processing (1) Load images, plot histograms		
14	Image processing (2), review Image filtering, convolution		