

Effective Data Analysis With MATLAB®

An Interactive Hands On Workshop

Course Outline

Distributions

Characterizing and comparing data distributions. Use and abuse of histograms. Data transformations.

Curve fitting

Use and evaluation of polynomial and other curve fit methods. Robust methods. Visualizing fit and residuals.

Time series

Fourier and other methods. Working with irregular sampling. Seasonal effects.

3D data

Surface fits. Contour and image plots. Use of color. Working with irregular sampling.

Interpolation

Choosing the best method. Dealing with data problems.

Beyond 3 Dimensions

Effective plotting and visualization. Additive fits.

Web resources

MATLAB functions available on the internet. Other sites for data analysis.

Custom content

This course will normally be customized to address client needs and interests. The use of client data is encouraged.

Summary

This is a one or two day intensive course in effective and efficient methods for modern data analysis in the MATLAB environment. It provides a solid foundation for development of analysis skills. The presentation and examples stress the best ways to analyze real data and present the results. This course follows *Visual Data Analysis* by William Cleveland.

What you will learn

- Getting data and associated information into MATLAB.
- Using the built in set of analysis functions.
- Using robust analysis functions.
- Organizing and saving data and results.
- Using 2D and 3D graphics for analysis and communication.

Who should attend

Engineers, scientists and programmers who work with complex, incomplete or inconsistent data. Those interested in robust and visual methods for data analysis. MATLAB users who want to expand their skills.

Instructor

Richard Johnson is the developer of the Data Visualization Toolbox for MATLAB, the author of the MATLAB Programming Style Guide, and an independent MATLAB instructor for 6 years. As a former Associate Professor at Oregon State University, he has taught both university and industrial courses. He has a B.S. in Mathematics from Purdue University and a Ph.D. in Engineering Science from UCSD.