

# MATLAB<sup>®</sup> Day 1

## An Interactive Hands On Workshop

### Course Outline

#### **Basic language features**

MATLAB data types, operators, built in functions, and grammar. Programming and naming conventions. Integrated development environment features.

#### **Files and directories**

Navigating directories, reading and writing basic data files, organizing your work.

#### **Numerical data and operations**

Matrix and array operations, logical operations, control flow.

#### **Character data and operations**

Manipulating and comparing strings, character conversions, using cell arrays of strings.

#### **Function files**

Function use and grammar. Making code modular, considerations for sharing and reuse. Simple debugging approaches.

#### **Data analysis**

Basic data characterization, curve fitting, interpolation.

#### **Graphics**

2-D and 3-D graphics, colormaps, annotation. Printing and exporting graphics.

#### **Help and resources**

Finding useful functions and their parameters and using the internet.

### Summary

This one day intensive course provides an introduction to the MATLAB computing environment and a solid foundation for development of programming skills. The emphasis is on quickly and effectively developing code which is correct and maintainable.

### What you will learn

- Working with numerical and character data.
- Accessing an extensive set of mathematical functions.
- Reading and writing data files.
- Using 2D and 3D graphics with color to present information.

### Who should attend

Engineers, scientists and programmers who have experience with any programming language. Self taught MATLAB programmers who want a solid foundation. Those interested in mathematical programming, data analysis, or visualization.

### 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.