Numerical Computation and Visualization with SCILAB

A 2-Day Course in Understanding SCILAB

ABOUT THE COURSE

SCILAB is an open source scientific software package for numerical computations providing a powerful open computing environment for engineering and scientific applications that similar to the commercial product MATLAB. This workshop provides a preliminary approach on the key features and capabilities of SCILAB to participants so that they can use SCILAB as the ultimate technical computing tool for their teaching and research.

This is a 2 full days foundation course to provide participants with a platform to learn Scilab quickly and successfully. Therefore, the participants are equipped with the knowledge of Scilab to address and solve real engineering & science issues, similar to the commercial software MATLAB.

WHO SHOULD ATTEND

Researchers, Lecturers, Scientists, Engineers and Managers that are not familiar but yet interested in using SCILAB for their teaching and R&D work. This hands-on workshop with case studies is designed mainly for beginners and users who are interested in learning a technical computing software that is similar to of MATLAB®. We encourage participants to bring own computer/laptop for own use.

COURSE OUTLINE:

DAY 1

Getting Started with Scilab
- What is Scilab and its benefits
- Starting Scilab Interface
- Scilab Work Directory
- Important Menus within Scilab
- Getting and Using Help

Basic Operations and Input/Output with Scilab
- Expressions in Scilab
- General Objects in Scilab
- Input/Output in Scilab environment
- Variable Handling and Management
- Command History & General Commands
- Case Study

Working with Arrays
- Creating and Manipulating Arrays
- Array Accessing and Addressing
- Arithmetic Operations with Arrays
- Systems of Linear Equations
- Built-in Scilab Functions for Analyzing Arrays
- Case Study

DAY 2

Basic Programming
- SciPad Editor
- Creating Script File (*.sce)
- Creating Function File (*.sci)
- Comparison between Script Files & Function Files
- Online / Inline Function
- Handling Strings in Programming
- Scilab Program Generation
- Case Study

Plotting and Visualization
- 2-D Plotting
- Labeling and Annotating Graphs
- Types of 2-D Plots
- Function Plotting
- Surface Plot (3-D)
- Scilab Demonstrations
- Case Study