

# Keysight Technologies

## Advanced Keysight VEE Pro

### Course Overview

Course Numbers:  
Keysight Training Center: H7218A-300  
Onsite Training: H7218B-300

*Learn to master the Keysight Visual Engineering Environment to create dynamic problem solving models and to create programs faster.*

#### Course Overview

This course will present detailed instruction, explanation and training for advanced programming of the current version of VEE Pro.

#### What you will learn

- Perform advanced instrument control programming, such as learning to let the instrument tell you your data is ready
- Specify and design efficient, supportable and structured VEE Pro programs
- Control other applications from VEE using ActiveX Automation
- Utilize VEE PRO's built in Matlab Script Engine to bring enhanced data analysis and display capabilities to your applications
- Enhance VEE PRO applications with Microsoft DOT NET FRAMEWORK CLASS LIBRARY functionality
- Integrate VEE Pro with C/C++ compiled programs
- Utilize Excel to set up your test equipment, test parameters, & store / visualize your data

#### Course Type

User/Application Training

#### Audience

The advanced course is designed for technicians, scientists, engineers and programmers.

#### Prerequisites

Students should have taken "Introduction to VEE Pro," or have at least six months experience in VEE Pro program development. In particular, an understanding of fundamental VEE Objects is important. Additionally, the following skills are important: using records, making and calling UserObjects & UserFunctions, write to and read from file.

#### Course Length

4 days

#### Course Format

60% lecture and 40% lab

#### Delivery Method

Scheduled (at Keysight training locations) or dedicated (at customer site.) To save you time and travel expenses, Keysight VEE Pro training courses can be delivered at your site. Keysight provides all required equipment.

#### Detailed Course Agenda

##### Day 1

##### VEE Pro Basics

- Introduction and Review

##### Advanced Instrument Control

- Instrument programming interfaces (program/drivers/ VISA/SICL/ Interface)
- Direct I/O implementation: how it works, SCPI implementation, tips, control inputs
- The IEEE-488.2 Status System
- Advanced I/O objects: interface operations, device events, implementing interrupts; throttling a process
- Creating an instrument control library: design considerations, error handling, state tracking, multiple instrument instances, initialization functions



Unlocking Measurement Insights

## Day 2

### Advanced Programming Practices

- Developing software requirements
- Designing & constructing an effective VEE Pro program
- Advanced Rules for Graphical Programming in VEE Pro
- Programming Style & Human Interface factors
- Using Excel templates for Test Setup, Configuration, Data Display & Storage
- Integrating C language programs:
  - Using C function libraries in VEE PRO
  - Importing libraries
  - Definition files
  - Error trapping

## Day 3

### ActiveX & Microsoft .NET Framework

- Overview of ActiveX
- Controlling Microsoft Excel using ActiveX Automation
- Overview of the Microsoft DOT NET Framework
- Adding Microsoft DOT NET controls to VEE Pro programs

## Day 4

### Microsoft .NET Framework

- Using the System menu (built in VEE / DOT NET objects)
- Adding custom .NET functionality to VEE Pro programs

### MATLAB Script

- MATLAB script overview
- Passing VEE Pro data to MATLAB script objects
- Passing MATLAB script results to VEE Pro
- Using MATLAB's signal processing toolbox
- Build a 3-D waterfall display with MATLAB Script plotting tools