

Course Overview

If you are a confident LabChart user who wants to improve your productivity by reducing the time spent on repetitive tasks, this course will guide you through a selection of LabChart's advanced functions. As well as finding ways to automate your data collection and analysis, this course will help you use LabChart functionality to apply more complex processing to your signals. You will also learn how to maximise integration with other instrumentation.

You will receive detailed instruction from experienced staff and have the opportunity to discuss the suitability of features for your specific experimental setup. You will also receive detailed take-home materials to make it easier to integrate your new knowledge into your research. You will have access to your own hardware terminal throughout the course, and a limit of four participants will ensure that you receive the level of attention you require.

Who should attend?

This course is useful for all scientists who confidently acquire data, but wish to maximise the functionality of LabChart software for their purposes. It is suitable for researchers who are familiar with the concepts of computerised data acquisition and have had experience collecting and analysing data with PowerLab systems and LabChart software.

The course would also suit reserachers who have completed both our *LabChart Level I: The Basics of Data Acquisition* and *Level II: Improving Your Data Analysis* training courses.

Learning Outcomes

At the end of this training course you will be able to:

- Use external triggers, signal waveforms or time-based events to automate recording in LabChart
- Use LabChart to control external instrumentation via the PowerLab unit's analogue output or digital input and output
- Apply filters, smoothing and more complex mathematic equations to your incoming or recorded data and customise detection settings in Cyclic Measurements for more irregular waveforms
- Use advanced Data Pad options including linking with Excel and using the Select and Find options to navigate through data
- Write macros for recording and analysis
- Adjust or write new macros with the Macro Editor

Course agenda

Automate Recording

- Software options to trigger recording
- Using the external trigger input on PowerLab systems
- Write macros to initiate and pause recording

Display Options

- Smart Tiling and customised layouts
- Scope View for overlaying and averaging continuous data waveforms
- Event Manager Extension for flagging up defined events online

Controlling External Instruments

- Analogue output – utilising and customising stimulator waveforms
- Digital output control
- Setting up the digital input using Preset Comments
- Fast Response Output Extension

Process Signals

- Customising Cyclic Measurement detection
- Smoothing Function – when to use and how much to apply?
- Analogue versus digital filters and the use of spectral analysis
- Arithmetic Function – Applying mathematic equations to your data

Automating Analysis

- Customising Data Pad and linking to Microsoft Excel
- Timed and Multiple Add to Data Pad
- Select and Find options to navigate through data based on event, time or comments

Macros

- How macros work
- Writing macros with mouse clicks and macro commands
- Making simple changes to macros in the Macro Editor
- Writing macros in the Macro Editor

Feature Manager

- LabChart Export Extensions
- Find LabChart features, extensions and modules in the Feature Manager
- Ensure you have the greatest available functionality with regular software updates